

# AMERICAN RAILROAD JOURNAL.

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HENRY V. POOR, Editor.

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## American Railroad Journal.

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Saturday, October 18, 1851.

St. Petersburg, (Russia,) September 6, 1851.

H. V. POOR, Esq.:

Dear Sir—Having just completed a journey to and from Moscow by the railway, opened within a few days, I beg to give you some notice of it. This magnificent work commences in a convenient part of St. Petersburg, at the top of the beautiful street the "Nefsky Perspective," about 2½ versts (a verst is 3,500 English feet) distant from the Admiralty, which is situated on the river Neva, and is carried in nearly a straight line in a south east course to Moscow, which is 607 versts or 400 miles from here, terminating on a light level about 2½ versts from the Kremlin, at the base of which is the river Moskwa. This road consists of a double track of 5 feet gauge, and has turnpike metal or broken granite stones for ballast on the surface. The superstructure consists of timber longitudinal rails on which at every 3 feet distance are placed tim-

ber cross-ties, and on them the iron rail is fastened by iron clamps, except at the junctions of the rails, which are either at 15 or 18 feet. There are cast iron chairs of 20 lbs. weight each, to support the rails. The rail comes from the Dowlais Iron Works in Glamorganshire, South Wales, and is of the flat base kind, and weighs about 60 lbs. per yard. The whole road, excavations, embankments, culverts, bridges and superstructure of railway, is constructed in a firm and durable manner. The bridges over the rivers Musta, (2,063 feet long on 2 abutments and 8 piers) Volkoff, (1,100 feet long on 2 abutments and 4 piers) Verbia, (1862 feet long on 2 abutments and 8 piers) over the Wolga at Twer (1500 feet long, 4 piers,) are all built of timber, on Howe's principle, by our ingenious and meritorious countryman, Mr. R. O. Williams, of Connecticut, who has proved himself a most successful and skilful bridge builder, under circumstances of great difficulty. Some of these bridges are elevated above the surface of the water from 125 to 175 feet. The engineer of this important national improvement was Maj. Whistler, of the Boston and Albany railway, who came here in 1843, and devoted his excellent talents and sound judgment to this road until the day of his greatly-lamented death, about 18 months since.—The Major was esteemed by every one, and we Americans have good reason to be proud of our countryman. Since Major Whistler's death, another countryman of ours, Major Brown, lately of the New York and Erie railway, has been made engineer in chief, and the road has been finished under his direction. I hope this amiable and most intelligent gentlemen and experienced engineer will soon have an opportunity of displaying his talents upon the contemplated railway hence to Warsaw, 1,200 versts, or 796 miles long. The locomotives on the St. Petersburg and Moscow railway were built by Harrison, Winans & Eastwick, from drawings by Major Whistler, and are what are called 'outside cylinder reverse valve engines,' and are intended for the burning of wood. These locomotives are 162 in number, of which 42 are for passengers and 120 for goods. The passenger engine weighs 25 tons, and is supported by 4 coupled driving wheels of 6 feet diameter, and by 2 leading wheels of 2½ feet diameter. The freight engine is on 6 coupled driving wheels of 4 feet diameter, and 2 leading wheels of 21 inches diame-

ter. There are about 2,700 other vehicles on this road, consisting of 162 tenders, and 1st, 2d and 3d class passenger carriages and goods wagons, all on 8 wheels.

The passenger carriages are built upon the American plan of one saloon with an aisle in the centre, and seats for the accommodation of two persons on each side. These carriages are most easy and comfortable. They are 56 feet long and 9½ feet broad. The two Imperial carriages are very magnificent, being 84 feet long by 10 feet broad and 7½ feet high, and supported on 16 wheels on the Bogie principle. These carriages have spacious apartments, furnished for the Emperor and Empress separately, in the most sumptuous and luxurious manner. They are fitted up with beds, and there is a kitchen car connected with each large Imperial carriage, where all the comforts to be derived from a well-provided larder, wine cellar, ice house and well-arranged cooking apparatus are furnished. The station houses on this road are built with great architectural taste, and are large and contain every convenience. There are 7 principle stations besides those at St. Pand. at Moscow, and are called Luban, Maloy Vischery, Obrechia, Balagom, Spirova, Tver, and Klin, situated generally about 75 versts (3,500 feet) from each other. These stations have work shops and other conveniences for the repair of the rolling stock. I have already mentioned that the rolling stock was made by Harrison, Winans & Eastwick, and their successors the new firm of Winans, Harrison & Winans have the contract for keeping up and maintaining the rolling stock. This magnificent railway when opened for public use will be of extraordinary benefit to the country. Passengers are now 75 hours by the diligence, over a dusty and most uncomfortable chaussee (turnpike) of 768 versts long, compared with 607 versts by railway, which will be performed in 15 hours. Wagons are 11 days in conveying goods between the two cities, whilst boats on the rivers and canals between the two towns are 51 to 55 or 60 days, without taking into account that boats are frozen up for 6 or 7 months when caught by the frost in the autumn; but on the railway at 15 versts per hour, at which rate the freight trains are limited, goods will be less than 2 days in going, winter and summer, from town to town. The expense of conveyance for both passengers and goods will be exceedingly

diminished, and the quantity of traffic now estimated at 1000 tons per diem from each city will be immeasurably augmented. I hope the success of this important work will be such as to induce the Emperor to extend it to Tula and Odessa, and to make the railway hence to Warsaw with all possible despatch. The country between the two capitals is generally flat and uninteresting. There is not a rock *in situ* in the whole distance, though there are occasional rounded granite boulders found in the excavations, but the whole distance is an alluvion of little fertility, producing miserable crops of oats and flax, and a bad race of pigs and small cattle. As the railway is made straight, without regard to any of the old towns, it runs through an unimproved and uninteresting country. The railway leaves Novogorod, 60 versts on the south, and Tver 4 versts on the north, and Klin, 3 versts on the north. All these three towns, which are large and important places, are passed through by the chaussee, but avoided by the railway. But the two large towns at the termini, St. Petersburg and Moscow, are among the most remarkable, magnificent, and interesting in Europe, and will well repay the trouble of visiting them. I close this rapid account of the St. Petersburg and Moscow railway, by wishing it every success, and may it be the excitement to construct as many roads as are now existing in our great republic, throughout this vast empire.

I do not know the cost of the St. Petersburg and Moscow Railway, but suppose it may be short of \$25,000,000 when quite completed.

Yours, very respectfully,  
A CONSTANT READER.

#### Canals in Canada.

From the Report of James Stewart, Civil Engineer, to the Board of Works, in 1848.

**Welland Canal.**—This canal extends from Lake Erie to Lake Ontario, and overcomes the interruption to the navigation caused by the Falls of Niagara. It has two entrances from Lake Erie, about seventeen miles apart; the upper entrance being from the Grand river, a little above Port Maitland, about thirty-seven miles west from Buffalo, and the lower at Port Colborne, about twenty miles west from Buffalo. It also communicates with the Grand river by a branch commencing on that stream at Dunville, five miles above Port Maitland, through which branch the whole canal has hitherto been supplied with water. The termination on Lake Ontario is at Port Dalhousie. The Port Maitland entrance has an advantage in spring over the Port Colborne, in being clear of ice several weeks before either that or Buffalo Harbor.

The work was originally undertaken by a company, for which an act was obtained in the year 1824, with a capital of £37,500. The canal then contemplated was a small one, and meant to extend from a point on Lake Ontario to the Chippewa or Welland river only, down which vessels would proceed to the Niagara and then ascend that river to Lake Erie. In 1825 another act was passed providing for the enlargement of the work. It was then proposed that the canal should not, as before terminate at the Chippewa, but that vessels from Lake Ontario, on reaching that stream, should proceed upwards to a point on its south branch, from whence another canal would be cut to join Lake Erie at the mouth of the Grand river, thus opening a direct communication between the waters of the two lakes. The summit level was to be at the Chippewa, from which therefore the canal would be supplied with water; but some difficulties having occurred in excavating what is called the "Deep Cut" to the necessary level, that intention was abandoned, and a small canal, to serve as a feeder, and which would also be navigable for boats, extending from a point a little south of the Chippewa to Dunville on the Grand river, was substituted. The canal from the south branch of the Chippewa to the mouth of the Grand river was

also abandoned, and a shorter route adopted from the junction of the feeder, to Port Colborne on Lake Erie. The company under the new act was authorised to raise a sum of £200,000, which, in 1834, was extended to £250,000, and a portion of this stock, amounted to £115,000, as stated in certain documents of that date, but in later ones at £117,800 was taken by private individuals. In a despatch of the Secretary of State to the Governor of Upper Canada, dated the 30th September, 1826, the estimate on the extended plan appears to have been £147,240, of which the Imperial government agreed to pay £16,360, or one ninth, for the free passage of vessels with public stores, being about the same proportion as was paid in the case of the Lachine canal: but this arrangement was altered afterwards, and a loan substituted. The work was commenced on the 30th November, 1824; the trunk from Lake Ontario to where the feeder joins it, and the feeder terminating on the Grand river, were opened on the 30th of November, 1829; and the trunk from the junction to Port Colborne, in 1832. The general width of the canal was twenty-six feet on bottom, and about fifty-six feet at top water line, with eight feet depth of water. In the "Deep Cut" the breadth on bottom was fifteen feet, and at top water-line forty-three feet. The number of locks was thirty-nine, all of wood; from Lake Erie to St. Catharines they were 100 feet long and 22 feet wide, with seven feet of water on the mitre-sills; below St. Catharines they had the same depth of water on the sills, but were 125 feet long by 32 wide.

In the end of the year 1834 the accounts appear to have stood thus:—

Stock—Held by private parties.....	£115,000	0	0
Do. do. Province of Upper Canada.....	107,100	0	0
Do. do. Lower Canada.....	25,000	0	0
Loans—from Imperial government.....	55,555	0	0
Do. do. Province of Upper Canada.....	100,000	0	0

Sum raised.....£403,055 0 0

And there had been expended on the works to this time about.....£411,000 0 0

At the beginning of the year 1837 the accounts stood thus:—

Stock—Held by private parties.....	£117,800	0	0
Do. do. Province of Upper Canada.....	107,500	0	0
Do. do. Lower Canada.....	25,000	0	0
Loans—From Imperial government.....	55,555	0	0
Do. do. Province of Upper Canada.....	102,000	0	0

Sum raised.....£407,855 0 0

In the year 1837 the Legislature of Upper Canada converted all the loans previously made by that province into stock, and authorised a farther subscription of £245,000, of which £66,144 appears to have been paid and spent during that year; £46,144 of it on the works, and £20,000 on the re-purchase of property formerly sold by the company.

At the end of 1837, therefore, the accounts would probably stand thus:—

Stock—Held by private parties.....	£117,800	0	0
Do. Province of Upper Canada (old).....	107,500	0	0
Do. do. do. former loan.....	162,000	0	0
Do. do. do. (new).....	66,144	0	0
Do. do. Lower Canada.....	25,000	0	0

Total stock.....£418,444 0 0

Loan from Imperial government.. 55,555 0 0

Sum raised.....£473,999 0 0

The expenditure on works to about the same period is stated in a document of Mr. Macaulay's, President of the Welland Canal Company, dated 12th February, 1838, and printed in the proceedings of the Assembly of Upper Canada, to be—

Private stock.....	£117,800	0	0
Public money.....	329,200	0	0

Total.....\*£447,000 0 0

\* Either this sum must be too small or that of £411,000, stated above as the expenditure at the

At this time, the stock raised, and authorised to be raised, would stand thus:—

Stock raised—Held by private parties.....	£117,800	0	0
Do. Province of Upper Canada.....	275,644	0	0
Do. do. Lower Canada.....	25,000	0	0

Total raised.....£418,444 0 0

Stock not raised, but authorised to be contributed from the funds of the province of Upper Canada.. 178,856 0 0

Total.....£597,300 0 0

In 1839 an act was passed authorising the government of Upper Canada to purchase the stock of private stockholders, by an issue of debentures, redeemable in twenty years from their date, bearing interest at the rate of two per cent. for the two first years, three per cent. for the third year, four per cent. for the fourth, five per cent. for the fifth, and six per cent. for the sixth and following years;—and so soon as parties owning two-thirds of the stock should have agreed to the terms, to assume the entire responsibility and management of the work thereafter, which arrangement was, in about two years, carried out accordingly. No statement has been found of the total sum expended on the canal up to the period when it came entirely under the control of the government, but it probably was very near £500,000, without reckoning the expenditure annually made from the tolls.

The enlargement of the entire work was commenced in 1841, and is not yet completed. A detailed estimate of the expense has not been obtained, but in a memorandum submitted to the Governor General, dated the 12th August, £450,000 is put down as an approximation to the cost, and this seems to have been the amount of the first grant made by the Legislature. Under this grant, the locks were to be of stone, 120 feet long by 24 feet wide, with 8½ feet of water on the sill, excepting one at Port Dalhousie, and another at Broad Creek, which were to be steamboat locks, 200 feet long by 45 feet wide, with nine feet water on the sill; and the supply of water necessary for the navigation and machinery was to be drawn, as formerly, from the Grand river, the summit level of the canal thus remaining unchanged. It was afterwards thought desirable to enlarge the smaller locks to 150 feet long by 26 feet 6 inches wide, with 8½ feet of water on the sill, and also to enlarge the trunk of the canal, and alter the curves to suit the increased size of vessels that would enter the enlarged locks; to reduce the summit level low enough to allow the water of Lake Erie to flow through the canal, from which lake, therefore, both it and the machinery would in future be supplied, and to substitute a steamboat lock between Port Dalhousie and St. Catharines, and another at Port Colborne, in place of the small ones previously contemplated. It was considered by the engineer in charge at the time, that these improvements might be made without exceeding the sum of £500,000, being the amount then appropriated; and the large excess of expenditure has been explained as arising mainly from the great difficulty both of estimating the extent of work required, and of ascertaining the cost when carried on in connection with an old canal much out of repair, and the navigation through which having to be always maintained, the two works continually interfered with each other. It will be seen from the tabular statement of canals, that the expenditure on the enlargement of this one, up to Dec. the 31, 1848, was £288,043 7s. 8d.: and that £942,350 is the sum estimated as required to complete it fully, making upwards of £1,400,000 for both the old and new work.

**Cornwall Canal.**—The object of this canal is to overcome the difficulties to the navigation of the St. Lawrence, presented by the long Sault Rapids. Operations were commenced in 1834, under local commissioners, appointed by an act of the Legislature of Upper Canada, and suspended in 1838, when the work was well advanced, for want of funds. Up to this period the expense was delay-

end of the year 1834, must be too large; for in 1837, £46,144 was spent on the work, and £20,000 in purchase of property.



ed by the government of the Upper Province. In 1842, the operations were resumed, under the direction of the Board of Works. The canal was partially opened in December of that year, and completed in June, 1843; but various slides and breaches have since occurred, which it has taken a considerable outlay to repair. The locks are the largest in Canada, having a chamber 200 feet long 55 feet wide, in the clear; the depth of water on the sills being nine feet, as in the other large canals of the province.

The original estimate for this work, as stated in Mr. Killaly's Report on the Public Works of Canada, dated April, 1846, was £191,903.

In the end of 1835, when work to the amount of £95,797 was calculated to have been done, the total cost, including that sum, was estimated in the Report of the Canal Commissioners at £238,216.

By Mr. Killaly's above report, there was actually expended under the commissioners £440,097.\*

And there has since been expended by government, up to the 31st December, 1848, £75,600, making altogether £515,697.

**Williamsburg Canals.**—These are a series of four short canals and six locks, lying between Prescott and Dickenson's Landing, constructed for the purpose of overcoming the rapids at the Galopa, Point Iroquois, Rapid Plat and Farren's Point. They were commenced in 1843; the first of them finished in November, 1846, and the last in October, 1847. Since then, farther works have been found necessary, some, if not all, of which will be finished for the navigation of 1849, and they will be carried on so as not to interfere with the navigation.

**Beauharnois Canal.**—The Beauharnois canal, extending from the lower end of Lake St. Francis nearly opposite Coteau du Lac, to the head of Lake St. Louis, overcomes the rapids of the Coteau, the Cedars, and the Cascades. It was commenced in 1842, and finished in the autumn of 1845. Farther works have been found necessary, some, if not all, of which, will be finished for the navigation of 1849; and they will be carried on so as not to interfere with the navigation.

**Lachine Canal.**—This canal extends from the village of Lachine, at the foot of Lake St. Louis, to the city of Montreal, overcoming the various rapids in the St. Lawrence between the two places.

The following particulars regarding the old canal have been obtained from a statement, dated Montreal, 19th March, 1842, and signed F. Griffin. The work was commenced in 1821, under the provincial statute, 1 Geo. IV. c. 6. The canal was partially opened in 1824, and completed in 1825, at an expense of £109,601 0s. 9d. currency. (In a report of the directors of the Welland canal, dated the 31st December, 1829, the cost is stated at £120,000.) The funds were furnished by the govt. of Lower Canada with the exception of £10,000 contributed by the military government, to secure a free passage for troops, stores, &c. (In a despatch from the Secretary of State to the governor of Upper Canada, dated the 30th September, 1826, it is stated that £12,000 was granted by the Imperial government.) The length of the canal is eight miles and 718 yards; its breadth at bottom twenty-eight feet, at top water line in rock excavation thirty-six, and in earth excavation forty-eight feet. The

\* In a Report of the Select Committee to the House of Assembly, dated 30th January, 1840, and which is the last public document that has been found relating to the work while under the charge of commissioners, the expenditure up to the end of 1839 is stated at £356,579. The books kept for the commissioners show the following expenditure for each year up to the end of 1839—

	£	s.	d.
1834.....	31,429	18	6
1835.....	85,849	12	8½
1836.....	82,821	13	6
1837.....	117,424	19	10
1838.....	36,676	17	6½
1839.....	7,931	9	9½

Total.....£362,134 11 10½

At this period a sum of £5,215 15s. 6½d. was due on outstanding notes given by the commissioners to contractors. In 1840 the books show an expenditure of only a few pounds, while none is shown either in '41 or '42.

prescribed depth was for vessels drawing four and a half feet water, but those drawing five, and even five and 3 inches have passed through. There are seven locks, all of cut stone, 100 feet long by 20 feet wide in the clear. The Guard Lock at Lachine has usually no lift; the two next have a lift of six feet each; the three next of eight feet each; and the remaining one, the entrance lock at Montreal, a lift of nine feet; making forty-five feet altogether. There are three culverts and fourteen bridges. The earliest period at which the navigation ever opened was on the 8th of April, in the year 1828, and the latest period at which it closed, the 8th December, 1830; but on an average of years, the 15th April may be reckoned as the period of opening, and the 15th November as that of closing the canal.

The enlargement of this work began in the end of 1843. It was sufficiently advanced in the spring of 1848, to allow the passage of vessels, and will be completed in 1849. The general dimensions are calculated for the same size of vessels as the Beauharnois and Williamsburg canals, but the two locks at the Montreal terminus have each a depth of sixteen feet water on the sills, to allow of large sea-going vessels passing into the second basin, which it is proposed to excavate to a corresponding depth at a future period, the first basin having been deepened already.

**Chambly Canal.**—The Chambly canal extends from St. Johns to Chambly, a distance of about eleven and a half miles, and was made to overcome the interruptions in the channel of the Richlieu, between the two places. It forms the chief portion of the works necessary to connect the navigation of the river St. Lawrence, by way of the Richlieu, with that of Lake Champlain. At a period not later than the year 1819, a private company was organised for the construction of a canal at Chambly, and an instalment of five per cent. on each share, was paid to cover the expense of preliminary examinations; but the proposal seems to have lain over, and ultimately to have been dropped without any practical result. The work, as finally undertaken, was authorized by the 3 Geo. IV. c. 41, which provided for the advance of £60,000 currency, from the funds of the Province of Lower Canada for the completion of a canal from Chambly Basin to St. Johns. The original estimate appears to have been about £50,000 and although Captain Melhuish, of the Royal Engineers, considered it as much too low, and stated £96,745 as the amount that would probably be required, the Commissioners under whose directions the operations were commenced and carried on, placed reliance on the smaller sum, and actually let the whole work for £46,218. It was begun on the 1st October, 1831, and carried on till the autumn of 1835, when although the Canal was very far from being completed, not only the original appropriation of £60,000, but a farther one of £5,000, made by the 3 Wm. IV. c. 30, for enlarging the locks, were found to be exhausted, and the work was in consequence stopped. At this period it was estimated that £20,000 would be required to finish the Canal, and again in 1839 when about £5,000, advanced by the Provisional Government, had been spent in upholding and repairing the work, it was estimated that £29,000 would be required. Authority was granted by the 2 Vic. c. 61 to borrow £30,000 for this purpose, but the money could not be raised on the terms specified, and nothing was done beyond the ordinary repairs, until a new power to borrow £35,000 on the security of the Province of Lower Canada, was conferred by the 3 Vic. c. 21. In 1840, the operations were resumed on this new appropriation, but about April, 1842, it became apparent that even that would be insufficient, and a further sum of £12,000 was craved to complete the work. Advances exceeding that amount were made from time to time through the Board of Works, from the funds of the Province of Canada, and ultimately the canal was finished and opened in 1843. The outlay up to the 30th June of that year may be stated approximately, at £120,204; disbursed as under:—

For new canal. Repairs. Total.

From the funds on under the security of the province

of Lower Canada.....	£101,219	£5,755	£107,004
From the funds of the united provinces of Upper and Lower Canada.....	£13,200	.....	13,200

Total.....£114,449 £5,755 \*£120,204

From the suspension of operations in 1835 up to 1840, the canal was used between St. Johns and the combined Locks of Chambly only, and yielded a revenue of about £500 gross; while from 1840 to 1843, as there is no return of revenue, it was probably out of use. There are nine locks all of stone, 120 feet long by 24 feet wide, and six feet of water on the mitre sills.

**St. Ours Lock, &c.**—This lock is in the river Richlieu, at the foot of the artificial navigation, about fourteen miles from its mouth, and with a dam raises the water above it sufficiently to overcome the shallow portions of the stream, and afford a free passage to Chambly Basin. In conjunction therefore with the Chambly Canal, this Lock opens a communication between the St. Lawrence at Sorel and Lake Champlain; while by the Northern Canal, the communication is continued from Whitehall to the navigable waters of the Hudson near Troy. At the site of the work the Richlieu is divided into two deep channels by a small island, in the eastern and narrowest of which the lock is built, while the dam extends across the western. The work was begun in the autumn of 1844, but in consequence of various hindrances, will not be finished until 1849. The length of the lock is 200 feet, by a width of 45 feet, with six feet of water on the sill. At the head it is joined to the shores by an embankment. The dam is about 600 feet long, formed of cribs filled with stone, and is connected with the shores by hammer-dressed abutments.

**St. Ann's Lock.**—This lock is situated on one of the branches of the river Ottawa, between the Village of St. Ann's and Isle Perrot, about twenty-five miles west of Montreal. It overcomes the St. Ann's Rapids, and thus, in conjunction with the Lachine and the Ottawa Military Canals, opens a communication from Montreal to Bytown, and thence by the Rideau Canal to Kingston. It was begun in the autumn of 1839, and completed in June, 1843. The lock is 190 feet long by 45 feet wide, with 7 feet of water on the sill in the ordinary state of the river during summer, and 6 feet at its very lowest state.

**Desjardines Canal.**—On the 30th of January, 1826, an Act passed the Legislature of Upper Canada, incorporating a company for the construction of a Canal, for sloops and other vessels of burthen from Burlington Bay to the Village of Cootes Paradise, with a capital of £10,000, which work is now known as the Desjardines Canal. It extends from a point at the head of Burlington Bay, about two miles north of Hamilton, to the Town of Dundas, and is including the natural and artificial navigation, between three or four miles in length. The depth of water proposed was eight feet.

The Canal was opened on the 16th of August, 1837, for vessels drawing 7½ feet water; and according to a Report of the Directors, dated the 2nd May, 1840, cost £24,671.

The money advanced by Government to the company is as follows:

By 2nd Wm. IV., chap. 24, passed in the year 1832.....	£5,000	0	0
" 5th do. chap. 34, passed in the year 1835.....	7,000	0	0
" 7th do. ch. 65, passed in the year 1835.....	5,000	0	0

Total.....£17,000 0 0

This loan bears interest at 6 per cent., of which there remained unpaid at the 31st of December, 1839, £2,873, 11s. 2d.; at the 31st Dec., 1844, £7,973 11s. 2d.; and at the 31st December, 1848, sup-

\* In addition to this sum there was expended by the Commissioners £3,550 for interest on borrowed money, of which £2,500 was paid by warrant from the Governor General, and £1,050 through the Board of Works. This was up to the 1st of May, 1843.



posing nothing has been paid in the interval, £12,053 11s. 2d.—making a total sum of £29,053 11s. 2d. due the Government at the latter date.

It thus appears that the canal has been far from profitable, which the Directors of the company attribute to the work having been constructed on too small a scale. In 1840, it was stated by them that only boats of thirty tons could navigate it; and in 1845, there was no more than five feet of water in some parts of it. On the 22nd of May, 1840, the Directors, in a memorial to the Lieutenant-Governor of Upper Canada, proposed to surrender to Her Majesty's Government the whole property and interest of the Stockholders in the said Canal until such time as the sum due Government was repaid; and on the 19th of June, 1841, the Directors again made the same offer to Lord Sydenham, but without success. In 1845 and 1846, estimates were made by the Board of Works for enlarging and completing the Canal, but the works were not undertaken. The estimates were for an enlargement from a breadth of 60 to a breadth of 100 feet at the surface, with twelve feet depth of water, and embraced two methods; the first, by following the present canal, and the line of the Creek, to Fish Point, a distance of 368-80 miles, at a cost of £31,893; the second, by following the present Canal for about two miles from Dundas, and then passing through the Burlington Heights in the direction of Fish Point, reducing the distance to 2 69-80 miles, but at a cost of £59,083.

#### Asphaltum in New Brunswick.

R. C. Taylor, Esq., a Geologist of well known reputation in this country, recently made a professional visit to the coal fields of New Brunswick for the purpose of determining whether a certain substance found there was coal or bitumen. The result of the joint report determines the substance to be asphaltum and not coal. The former is described as *mineral matter injected into an open fissure*. The latter is derived from vegetable materials—of plants which have grown, died, and slowly accumulated. Asphaltum and coal, then, are very different substances.

They differ in all respects, as we learn from chemical as well as geological investigation, as also from their adaption to useful purposes. The circumstances, says Mr. Taylor upon the survey of this vein, which lead me to the conclusion that its contents be asphaltum and not coal, are principally the following, viz:—

That whereas the true coal seams are disposed in uniformity and parallel with the surrounding or containing strata, and continue longitudinally and in uniform thickness through veins for considerable distances, veins of asphaltum appear to occupy advantageously lines of fracture, and are seen to ramify into smaller veins which traverse in irregular directions, unconformably with each other, any adjoining rocks whatever may be their age.

That the contents of coal seam are sub-divided longitudinally, viz: in the *longitudinal direction* of the seam, and thereby mark the line of accumulation, or the planes of deposit, in contradistinction to asphaltic veins, which present no parallel lamina, but whose divisional planes are placed transversally, viz: at *right angles* to the sides or walls of the veins.

And whereas the matter of true coal seams is *wholly of contemporaneous origin*, geologically speaking, with the contiguous strata, veins of asphaltum, on the contrary, are always *posterior* to the surrounding strata.

Coal, from the nature of its formation from vegetable matter, and from the adjoining beds which abound in organic forms, such as shells and fishes, which formerly occupied the contiguous waters, furnish the direct evidence that such strata were originally deposited or existed horizontally.

In the case of asphaltum, the divisional planes run transverse, or about at right angles to the walls of the vein. These *planes of division* are judged to have been formed during the process of cooling, contraction, and consolidation of the material.

In the case of a coal seam the *planes of deposition* run parallel with the seam itself. In this cha-

racteristic a vein of asphaltum and a seam of coal are entirely opposite to each other.

Mr. Taylor entertains the opinion that the asphaltic vein at Hillsborough was protruded from below. He perceives unquestionable evidence that such was the fact, and consequently infers therefrom, that it could not possibly be a coal seam. The calcareous, fish-containing, bituminous shales through which this asphaltic vein was protruded, are seen to pass, on the south, beneath gray and red conglomerates, grits, marls and sandstones. This series, according to the limited attention I had time to bestow on them, appeared to occupy the position which is usually assigned to the Old Red Sandstone group. This group is situated beneath the coal formation, which approaches within a few miles of the Hillsborough Mine.

Veins of asphaltum are of great rarity. With the exception of the Hillsborough vein, I am not aware of any upon this continent. It differs here from that of Cuba, only in the rock formations adjacent. In Cuba they are chiefly in a metamorphic state; and the same agency no doubt gave rise to the intrusion of the asphaltum. I neither saw nor heard of any tendency to fire-damp there. The differences between the asphaltum of Cuba and that of Hillsborough, are very slight and immaterial; but some varieties are more open or porous than others, probably owing to the escape or extrication of a greater amount of gas in the latter case, while under the process of cooling, particularly near the upper portion of the vein.

#### Important Railway Trial.

The Supreme Court is sitting at Greenfield this week, and an important case, or rather double case, has been tried, in which some eminent counsel as Rufus Choate and George Ashmun were engaged on opposite sides. The cases were Dr. Amos Taylor, and Dr. Taylor and wife, against the Vermont and Massachusetts railroad company, for damages sustained by the wife in alighting from a car at Wendell depot, in the fall of 1850. The turning facts were thus: notice was given of the station; the cars almost or quite stopped; she had got on to the platform to alight; and the cars started with a jerk, and she was thrown to the ground and badly hurt;—the point was, whether she was in a place of safety when she attempted to alight: if so, the Company were not liable—if not they were. The verdict was \$1000 for the plaintiff in the first case, and \$2,000 in the last—\$3,000 in all. Choate, Davis, and Allen, and Mattoon for plaintiff; Ashmun and Aiken for defendants.—*Springfield Republican*.

#### Liabilities of Common Carriers.

In the New York city Circuit Court, J. King, was tried, last week, the case of Levi Fowler vs. Joshua Maxwell and Charles Parsons. In October, 1849, Mr. F. put on board one of the Eckford line of tow boats, in New York city, a quantity of teas and other articles to be sent to Port Stanley, Canada West. The goods two months afterwards were lost during a storm, in a sailing vessel by which they were sent, on Lake Ontario. Action is brought against Messrs. M. & P. as the owners of the line and common carriers, to recover the amount, it being alleged that the goods should have been sent by the Erie Canal to Buffalo, thence by steamer to Port Stanley, which is on Lake Erie, instead of by the way of Oswego, also that there was unnecessary delay in forwarding. The defence was that Messrs. M. & P. were not liable, also that Mr. Thomas P. Waters was a partner, who is not joined in the action, and that defendants were mere forwarders and not common carriers, and that the agreement said "by way of the lakes." The Court charged that it does not matter whether parties, in such cases are owners or not. If they undertake to forward goods, they become common carriers. It is their duty also to forward by the usual and direct route, and there having been a deviation in this case by forwarding on the Oswego and Lake Ontario route, defendants are liable. Verdict for plaintiff, \$566. In regard to the point as to copartnership, it was shown that a law was passed in 1836, which makes it necessary for partners in the forwarding business to file with the county clerk of each county through which the line passes, a certificate stating the copartnership

and the names of those composing it; and in the event of their not doing so, each partner is liable, and they cannot set up a non-joinder. It was not filed in this case.

#### Magnitude of Modern Road Works compared with Ancient.

The Rev. Mr. Burgess, B. D., lately read a paper at the Institute of Architects, in which, speaking of the extent of ancient Roman road works, he said:—I have spoken of 234,000 cubic feet of masonry and rubble as contained in one of the great works of the Via Appia; the high level bridge at Newcastle alone contains of masonry 681,609; of rubble 116,396; of concrete 46,224; total 844,229; besides 5050 tons of iron, of which the Romans knew nothing. The whole cost of this undertaking was £234,450. The cubic feet of masonry in the Britannia bridge, which we must consider as a viaduct, and the wonder of the present age, is 1,500,000; and the cost approximately calculated by Mr. Edwin Clarke, was £601,865. The cost of the Conway bridge, with £38,500 worth of masonry, was £145,190. And, finally, the Tweed Viaduct is said to contain two million cubic feet of masonry. We have, then, in these four great works alone—the Britannia and Conway bridges—the Newcastle or Berwick viaducts, or bridges—near four millions and a half of cubic feet of masonry; the whole costing not less than £1,280,000. That is to say, if we could find in the Roman empire one hundred such works as the celebrated construction of the Via Appia, they would hardly equal in masonry or stone work these four productions of the "ultima Britannia."

Although we have but little or no data to go upon for making a comparison of expenditure and labor, yet we may gather enough to maintain the proposition, that all the great works of the Roman empire connected with the lines of communication did not equal the works of a similar kind which now exist in the island of Britannia. Another thing which hinders us from making comparisons as to cost: we have in every line of railway £6000 per mile for land; Appian Claudius cut through the country of the Volsci without asking the price, and dispensed with all juries for assessing damages.—The comforts of law expenses were not known; and I doubt if the surveyors and engineers got £1200 a mile. When Augustus remade the Flaminian way to Rimini, he was the sole shareholder, and gave no script. Julius Caesar and Marc Antony raised great works, but they knew nothing about raising dividends. That which would have astounded them more than an irruption of barbarians would have been a bill of £1800 for every mile of road for parliamentary and law expenses.—*The Builder*.

#### Railways to Indianapolis.

There are now in course of construction, and in considerable forwardness, no less than three railways from Cincinnati to Indianapolis. In all these our citizens are stockholders, and two of them our city has aided by large loans of its credit. The city, the business men of the city generally, and the stockholders in these companies—one and all—are deeply interested in the vigorous prosecution and early completion of these several roads. Our profits and our credit require these works to be finished, and they will be.

The St. Louis company, to aid which both the city and our citizens have contributed liberally, construct a line from this city to Lawrenceburgh, and from thence Judge Dun's company have a line of road under contract to Indianapolis, by way of Greensburgh and Shelbyville, a portion of which is nearly ready for the iron. In this section of the line our citizens have taken some stock, and we are looked to for but a small additional amount to insure its early completion. It is on an excellent and nearly direct line, and is, in every view, an important improvement. The additional stock necessary to complete it should be taken without delay. The rail on this line will be laid on the Ohio gauge, and thus avoid the inconvenience of any transhipment.

Mr. Caleb Smith's line from Indianapolis to Connersville, and the College Corners, connects with the Hamilton and Dayton road at Hamilton. Arrangements have been made and are in progress



for the early construction of this line. We are assured that Indiana will construct the work without delay to the Ohio line, if Ohio will construct it from that line to Hamilton. These arrangements are nearly completed, and will not require any very large additional amount of subscription among us to the stock. Most of what is needed will be taken by those residing on the line. This also is a pretty direct line, and the track will be laid on the Ohio gauge.

The road from Hamilton to Eaton and Richmond, intersects the Central railway at the latter place, and opens to us a way on that line to Indianapolis. To the Hamilton and Eaton portion of this road, extending from this city to the Indiana line, the city and our citizens have contributed liberally. The work has been pushed forward vigorously, and is now nearly ready for the rail. There is a short link of four miles on this route, from the Indiana line to Richmond, under a different organization. A considerable portion of the stock required for this link has been subscribed in this city. It is under contract, and with a few hundred dollars additional subscription, will open this third line of railway from this city to Indianapolis. From Richmond this road is extended northwest, by Newcastle and Anderson, to Logansport, and on to Chicago. To this line as far as Logansport our citizens have contributed liberally, and we believe the whole line is under contract. This line will connect all northwestern Indiana with Cincinnati, by an unbroken line of railway, laid down on the Ohio gauge.

In no other direction are we prosecuting equally extensive and important works. The desire to push on these lines has so absorbed our attention, that we regard with less favor than they deserve, other lines of railway very important to the business of the city, which hold out fair prospects of profit to the stockholder, in the shape of dividends, say the southern roads, to Lexington and Nashville, and from Louisville to Covington, and also the Wilmington and Zanesville, and the Belpre roads east.

We should be careful to direct our efforts to points where the greatest good is to be effected, and to the completion of lines already begun.—*Cin. Gaz.*

#### Massachusetts Railways.

For the purpose of showing to what extent the people of the State participate in the benefit of the lines of railroad which traverse it, it may be pertinent to state that there are in Massachusetts 32 cities and towns which have each 5000 inhabitants and upwards, and that one or more of these railroads pass through, or terminate in each of these towns, with the exception of Nantucket only, which is an island, 20 miles removed from the main land; and that on each railroad two or more passenger trains run to and from Boston daily, Sundays excepted. There are in the State ninety-eight towns of a population varying from 2000 to 5000, of which seventy-three are situated on some one of the said lines of railroad, and have the same facilities of communication as the larger class of towns. Of the 25 towns of from 2000 to 5000 inhabitants, 13 are seaport towns, mostly in the Old Colony, and a large proportion are situated near a railroad station in an adjoining town. The population of the smaller class of towns have the opportunities of railroad accommodation in nearly the same proportion as those of the class above mentioned.

#### Rutland and Washington Railroad.

The track of the Rutland and Washington railroad is already laid with iron to Granville, N. Y., a distance of 20 miles from Rutland, and the entire line from Rutland to Eagle Bridge, fifty-seven miles, will be ready for running this month. This line is intended to connect with the road running from Albany to Cohoes, and thence northward to Eagle Bridge.

#### Indiana.

*Lafayette and Crawfordsville Railroad.*—The Crawfordsville Review says that ten miles of the Lafayette and Crawfordsville railroad would probably be completed last Saturday, Sept. 20.

#### Ohio.

##### Cleveland, Painesville and Ashtabula Railroad.

The last stone of the Painesville bridge was laid on the 6th inst., and this massive structure which has a length of 795 feet, with piers 60 feet high, abutments 80 feet above the river level, and 88 feet above the waters of the lake, is now completed as to its masonry, and ready for the superstructure. The first stone was laid no longer since than the 26th of May last; so that Mr. Lockhart, the energetic contractor, has collected and raised the whole in about three months of working time.

The Willoughby bridge is in course of completion; the timber being on the ground, and work in full activity, so that the laying of the track, which has commenced at the Cleveland terminus, will not be impeded, and will reach Painesville in good time. The earth-work on the line is nearly done throughout the line from Cleveland to Ashtabula; but few openings remaining, and those a few weeks' work will complete. The earth along this line is of the best description, as a general thing, being over full one-half of the distance from Ashtabula to Painesville either gravel or sand, so the work of blasting will be, so far, already done, and the cost saved.

There are no curves on any of the running lengths of this railroad; between station and station, the line is invariably straight, and the necessary curves are introduced at the several stations or stopping places. This is a novel feature, and an excellent one.

We are informed that the laying of the track from Ashtabula westward, will be shortly expected to assist this operation, so that by the time the superstructure at Painesville is completed, the iron track from Ashtabula will there meet that advancing from Cleveland, and sixty miles of road be at once opened.—*Ashtabula Telegraph.*

#### Baltimore and Ohio Railroad.

The following table shows the gross revenue of the Baltimore and Ohio railroad, for the year ending on the 1st of October, 1851, compared with the corresponding year of 1850:

	1849.	Main Stem.	Washington Branch.
October,			
Passengers.....	\$40,334 20		\$19,897 22
Freight.....	86,868 77		4,712 69
November,			
Passengers.....	30,179 42		17,370 76
Freight.....	94,288 04		4,336 43
December,			
Passengers.....	118,240 12		24,079 50
Freight.....			
1850.			
January,			
Passengers.....	\$24,828 82		\$18,009 17
Freight.....	66,547 89		3,888 97
February,			
Passengers.....	29,090 34		19,523 29
Freight.....	75,630 01		3,925 68
March,			
Passengers.....	44,271 15		25,953 72
Freight.....	81,747 03		7,255 00
April,			
Passengers.....	35,574 85		21,945 85
Freight.....	68,677 94		3,941 94
May,			
Passengers.....	33,177 36		24,543 72
Freight.....	72,840 39		4,240 69
June,			
Passengers.....	29,768 15		21,168 03
Freight.....	82,484 20		6,027 59
July,			
Passengers.....	32,543 53		24,407 45
Freight.....	61,691 82		2,821 64
August,			
Passengers.....	31,773 82		23,256 86
Freight.....	73,550 29		3,674 61
September,			
Passengers.....	33,636 35		24,300 50
Freight.....	94,355 00		11,921 68
	\$1,343,805 27		\$321,201 46
			1,343,805 27
Total of 1850.....			\$1,666,006 63

#### 1850.

October,		
Passengers.....	\$37,542 10	\$23,734 77
Freight.....	97,325 04	4,662 33
November,		
Passengers.....	25,802 46	19,091 71
Freight.....	84,544 87	4,614 67
December,		
Passengers.....	124,590 60	26,350 20
Freight.....		
1851.		
January,		
Passengers.....	\$25,298 63	\$20,140 18
Freight.....	90,450 07	4,607 14
February,		
Passengers.....	27,567 98	22,048 59
Freight.....	90,402 11	4,236 80
March,		
Passengers.....	33,635 14	22,645 68
Freight.....	84,353 74	7,158 39
April,		
Passengers.....	29,503 96	20,675 60
Freight.....	71,035 03	4,093 24
May,		
Passengers.....	25,589 32	19,146 54
Freight.....	66,638 87	3,863 12
June,		
Passengers.....	25,086 78	18,906 02
Freight.....	85,768 19	5,875 54
July,		
Passengers.....	29,036 10	20,737 52
Freight.....	65,912 07	3,377 67
August,		
Passengers.....	33,417 51	20,268 27
Freight.....	69,254 80	3,905 27
September,		
Passengers.....	36,878 35	22,935 05
Freight.....	89,589 04	7,461 15
	\$1,349,222 75	\$309,537 75
		1,349,222 75
Total of 1850.....	\$1,666,006 63	
" 1851..	1,659,760 50	
Decrease.....	6,246 13	

Total of 1850.. \$1,666,006 63  
" 1851.. 1,659,760 50

Decrease..... 6,246 13

This statement, under all the circumstances that has attended the year, is a most gratifying one. The business of the year ending with September, 1850, was greatly over that of the previous year, and was owing in part to large amounts of freight that were sent over the road, to meet the demand and high prices which then prevailed. And with this, the Ohio river was in a much better navigable condition during the last summer than it has been this, whilst the railroads from Cincinnati to Cleveland, and from Erie to New York were not then completed. Now, however, these roads are completed, and by reason of the Ohio river being so low that it is scarcely navigable now for boats of the smallest class, a large amount of the travel, which would have passed over the Baltimore and Ohio road, has been attracted from it to the lake route by way of Cleveland, and Dunkirk and Buffalo.

This has left the Baltimore and Ohio railroad to depend on its local trade and travel—a trade and travel, which under no circumstances, can be withdrawn from it—and yet, as we see, the gross revenue of the road to Cumberland has been greater than last year, amounting to \$1,349,222 75, which if the road were to stop at Cumberland, would pay certainly over 6 per cent. on the par value of the stock. We may infer from this, what revenue it will yield when the road reaches the Ohio river.—*Baltimore Patriot.*

#### East Tennessee and Georgia Railroad.

We understand, says the Knoxville Register of the 18th ult., that Mr. Prichard and his corps of engineers, are now busily engaged in resurveying and relocating the route for the railroad between Blair's Ferry and Knoxville. They have already permanently selected the site where the bridge will cross the Tennessee river, and the company will probably let the bridge out by contract at the next meeting of the Directors, and also a part of the road for grading.

**Boston Railroads.**

For the purpose of ascertaining the number of persons arriving and departing daily to and from the city of Boston, the city marshal, a few days since, so distributed the police as to enable him to make up an accurate list of all persons passing over the great thoroughfares leading to that city. The following is the statement of the arrivals and departures by railroad for one day.

PASSENGER TRAINS OUT.			
	Trains.	Cars.	Passengers.
Lowell .....	13	116	1,375
Maine .....	22	132	2,584
Fitchburg .....	22	148	2,123
Eastern .....	11	30	1,804
Old Colony .....	14	136	2,264
Worcester .....	22	192	2,580
Providence .....	16	111	1,946
Total .....	120	872	12,952

PASSENGER TRAINS IN.			
	Trains.	Cars.	Passengers.
Lowell .....	12	114	1,305
Maine .....	21	178	2,600
Fitchburg .....	22	146	1,952
Eastern .....	10	34	1,697
Old Colony .....	14	118	1,981
Worcester .....	21	178	2,367
Providence .....	16	122	1,670
Total .....	116	1,132	11,963

FREIGHT TRAINS OUT.			
	Trains.	Cars.	Passengers.
Lowell .....	9	388	40
Maine .....	5	160	27
Fitchburg .....	7	172	50
Eastern .....	1	20	10
Old Colony .....	7	272	32
Worcester .....	5	186	30
Providence .....	4	134	118
Total .....	38	1,332	307

FREIGHT TRAINS IN.			
	Trains.	Cars.	Passengers.
Lowell .....	9	271	45
Maine .....	5	163	26
Fitchburg .....	9	207	52
Eastern .....	1	16	10
Old Colony .....	6	197	28
Worcester .....	5	150	30
Providence .....	4	134	117
Total .....	39	1,138	308

The whole number of railroad trains leaving the city was 158; arriving, 155. Total of arrivals and departures, 313. The number of passengers arriving by railroad was 12,291; departing, 13,259.—Total of arrivals and departures of passengers, 25,539. Below we give the recapitulation of all the arrivals and departures of persons for the day:

	Went out.	Came in.
Per passenger trains .....	12,952	11,963
Per freight trains .....	307	308
Per vehicles .....	15,964	14,942
On foot .....	12,887	14,310
On horseback .....	124	127
With handcars .....	79	79
Total persons .....	42,313	41,729

The above may be taken, we presume, as a fair average of the daily arrivals and departures, both of railroad trains and persons.

**Canada.**

**St. Lawrence and Atlantic Railroad.**—The formal opening of this road for business to Melborne, 73 miles from Montreal, took place on the 15th instant. Beyond Melborne the road is graded to Sherbrooke, 23 miles. The entire road will be completed during the next season, unless in the excavations to be made, the company meet with some formidable unknown obstructions, requiring a longer time to remove them, than is at present anticipated. Further, that so far as funds are concerned, they are provided with the whole amount necessary to complete and stock the road.

**Kentucky.**

**Covington and Lexington Railroad.**—The Directory of the Covington railroad company have ordered a corps of engineers to survey and locate the road between Paris and Lexington. The company have a charter that authorizes them to construct a railroad from Covington to Lexington, and they expect to accomplish the work with the least possible delay.

From Falmouth down, the contractors with full force, are at work with commendable activity. The tunnel at Grant's Bend will be completed by the 1st of April next.

The difficulties about the right of way between Anderson's Hill and the Depot, in this city, have been pretty much removed, and the work on all this part of the road will be commenced at an early day. Messrs. T. Greer and Carmichael have taken the contract for the tunnel at Anderson's Hill. They are responsible, energetic men, and will push the work through.—*Covington Journal of the 4th inst.*

**Maine.**

**Portland and Kennebec Railroad.**—The railroad meeting, at Richmond, on Thursday last, was well attended, and the best of feeling prevailed. The old Board of Directors was re-elected, with the exception of Wm. B. Grant, of Gardiner, who declined, Major Lally being chosen in his place—and of Henry Reed, Esq., of Hallowell, who also declined, and Abram Rich, Esq., takes his place.

It was voted to issue bonds of the company for \$200,000 to be sold at not less than 90 per cent. The sum thus to be raised is mostly wanted for station houses and furniture not included in the estimate last year—for the payment of some debts not then known—for excess of land damages over and above the estimates—for payments to the sinking fund and for interest, not included—and for some other items. We understand that about \$50,000 worth of bonds was taken or provided for on the spot. The road is now so nearly completed that we may with certainty consider all the items of expense to have been definitely ascertained, and that no farther calls will be made.—*Kennebec Journal.*

**Newly Invented Wheels for Steam Vessels.**

Captain Geo. S. Weeks, the Oswego Ship builder, has invented a new wheel for propelling vessels, and has taken the necessary preliminary steps to secure a patent right for the same. This wheel is believed to be an important improvement, which will supersede the wheels now in use. It has been introduced into the steam tow boat Howard, now employed in towing vessels in our harbor, and works admirably. A much higher degree of power and speed are attained, without the slightest jar from the wheel.

It is difficult to convey an intelligent idea of the construction of the wheel, which can be seen in operation on the Howard. The buckets cross each other at an angle of about 45 degrees, and are slightly curved or twisted so as to enter and leave the water perfectly easy, and without the jar produced by the ordinary wheel. By this form of construction, a much greater strength is obtained for the wheel, and is also much better adapted to the variations in the draft of sea going vessels. The prominent and manifest advantages of this wheel over those now in use, are the attainment of greater speed, and the entire relief of the vessels from the motion or jar which more or less attends vessels propelled by steam.—*Oswego Times.*

**Coal in Iowa.**

Dr. Owen, the geologist, who surveyed the State by order of the United States Government, stated before the American Scientific Association, in reference to the coal deposits of Iowa, that—

"Between Johnson and Iowa counties an uplift of carboniferous sandstone is encountered, which is probably near the eastern limits of the Des Moines coal field. The Iowa river meanders near the eastern margin of this coal field, but the seams presented on the river are of inferior quality. It is upwards of two hundred miles in the direction of the valley of the Des Moines across the great coal fields. Westwardly it extends from the Des Moines

river nearly across the State of Iowa. The entire area of this coal field in Iowa alone cannot be less than twenty thousand square miles, in all embracing a country nearly equal in extent to the State of Indiana."

He estimates the beds of coal to be one hundred feet in thickness, and, lying near the surface, they must be capable of being worked easily and at small expense.

**Evansville and Illinois Railroad.**

We learn from the second annual report of this company, submitted to the stockholders on the 6th inst., that rapid progress is being made toward the completion of this work to Princeton, 27 miles.—Already the iron is laid for 10½ miles from Evansville, and the work is in such a state of forwardness, as to justify the belief that the road will be opened to Princeton on the 1st of January next.

The company speak in high terms of the material and machinery purchased abroad for the road. The locomotives were manufactured by Messrs. Norris, Brothers, of Philadelphia, and are stated to be equal to any ever made in the United States. The cars were manufactured by Thresher, Pacard & Co., of Dayton, Ohio, an enterprising company recently located in that place.

In his report, speaking of the extension of the road to Indianapolis and Vincennes, the President says:

"The extension of the road through the Valley of White river to the Capital of Indiana a distance of 180 miles is a consideration of vital importance, and should never be lost sight of by the Company. To enable the company to accomplish that object, the Legislature of Indiana at its last session granted to them an amendment of their charter, which amendment has been adopted by the company. For the purpose of raising means to put under contract that portion of the road lying between Princeton and Vincennes, a distance of 24 miles, books for the subscription of Stock were opened at Vincennes, and other places along the line of the road, and I am gratified in having in it power to communicate to the Board of Directors and to the Stockholders, the intelligence, that Stock has been taken sufficient in amount to justify the company in ordering a survey and location of said road. I therefore recommend that the Board make an order for its immediate survey and location. At the last session of the Legislature a company was incorporated by the name of the "Wabash railroad Company," to construct a road from Vincennes to Terre Haute, a distance of sixty-five miles, with the power to extend the same up the Wabash Valley through Parke county to Crawfordsville in Montgomery county. There is a privilege given in the charter for that company to become incorporated with the Evansville and Illinois railroad company, if the interest of the two companies shall require such union. That the completion of the road from Vincennes to Terre Haute will greatly add to the business of our road, cannot be questioned. Taking into consideration the very small sum it will cost to prepare the road from Vincennes to Terre Haute for the iron, and the large amount of travel and traffic flowing down the rich Wabash Valley that must pass over that road, there will not be found in the State of Indiana, or even in the United States, a better paying road from the very moment it shall be put in operation. Of so much importance will that road be to the eastern portion of the State of Illinois, and western Indiana, that we cannot look on with indifference to its progress. Our interest identified with their interest, and every thing our company can do to advance that work, ought to be done. There is probably no road that can be graded as cheap, and it has no stream of any magnitude to cross. The people along the line of the road can grade and bridge it, without embarrassing themselves in the least. The iron, which at present prices may cost some two hundred thousand dollars, is the great item to provide for.—Cannot our Company aid them in procuring the iron? Is it not our interest to do so? I think both of these questions may and ought to



receive a decided affirmative answer.—With a view of bringing about the early commencement of that road, I recommend that our Board make such order in the premises as may tend to accomplish that object.

The financial affairs of the company are in a very favorable condition. The whole cost of the road, when completed to Princeton, will be about \$260,000, viz:

Iron.....	\$100,000
Grading and bridging.....	90,000
Equipment, etc.....	70,000
	<hr/>
	\$260,000

The company has no liability beyond its means. The iron and grading have been paid for. The last item of \$70,000 was obtained upon the company's bonds, having ten years to run. The company has also, undisposed of, \$80,000 in the bonds of Vanderberg county, which can be applied to the extension of the road north.

After the presentation of the report, resolutions were passed, instructing the directors to proceed forthwith to make a final survey of the "Evansville and Illinois railroad" from Princeton to Vincennes—procure the right of way along the line of said survey, and as soon as said route is permanently located, put the grade of the same, and the section of the bridge across White river under contract; also to take measures as soon as practicable, to procure sufficient railroad iron, to lay the track from Princeton to Vincennes as soon as the same is permanently located.

A committee was appointed to confer with the Henderson and Nashville railroad company, in reference to the construction of their proposed road. A resolution was also passed, complimenting "the president, directors and officers of the Evansville and Illinois railroad company, for the efficient measures taken by them to complete said road to Princeton, and stating that they have the entire confidence of the company."

By reference to a map of Indiana, it will be seen that the extension of this road to Terre Haute and Indianapolis is a matter of great importance to a large portion of Indiana. Such an extension is necessary to give symmetry to the railroad system of the State, and to secure to every portion of it the advantages of this kind of communication. Evansville, being situated near the mouth of the Wabash, and being the southern terminus of the great Indiana canal, must become the shipping port for the western and southwestern parts of Indiana. It is highly important, therefore, that it should be accessible by railroad from every portion of it. It would also be the great route for travel going south, which would take that route striking the river at the lowest point, for the saving of time effected, and for the reason that navigation below Evansville is better than above.

The company in the management of its affairs has proceeded with great prudence and discretion, and consequently find themselves in the present pressure in the money market, in entirely independent circumstances, and in good condition to go on with new work.

The directors for the present year are Jno. Wise, Jas. G. James G. Jones, Jno. Ross, G. B. Walker, B. M. Thomas, Jno. S. Hopkins, Wm. Burtch, Sam'l. Orr, Sam'l. Hall, Alanson Warner, John Ingle, jr., R. W. Dunbar, John M. Stockwell.

At a meeting of the directors, Samuel Hall, of Princeton, was re-elected President; John Ingle, Secretary; Alanson Warner, Treasurer—all the same officers as last year.

#### Tolls on the James River Canals.

A good deal of dissatisfaction prevails on the line of this work, in consequence of the high rate of tolls charged, which are five or six times greater than the rates charged for similar articles on the canals in this State. The former appear to us to be exorbitant, but it must be borne in mind that the policy which regulates the rates of toll on the Erie, are not applicable to the James River canal. In the case of the former, it may be safely calculated, that any important reduction in the cost of transportation, will be followed by a large increase of freight. Such would not be the case with the Virginia canal. This work at present only extends to Lynchburgh, 145 miles, and commands the traffic of a small belt of country only. The receipts of the James River company are barely sufficient to keep the canal in order and pay the interest on its indebtedness. This company is not in a position to act with a sole eye to the public convenience, but is forced to pursue that policy which bids fair to produce the greatest amount of revenue. The company must have all the income it can get, and if the rates of toll are such as to secure this end, we do not think that it is liable to censure. The work is a great benefit to the public at large. The stockholders have sunk their entire capital, and they are certainly entitled to receive a sufficient return to pay the interest on their loans. Whether a lower rate than is at present charged, would yield a greater revenue, we of course are not competent to decide.

The Erie canal, on the other hand, opens cheap and expeditious route for the whole west and southwest, with the sea board; and a more convenient outlet for the territory penetrated by the Mississippi and the great lakes, than by following them to the ocean. New York is the great receiving and distributing depot for the United States, both for our domestic products, and foreign merchandise. A greater part of our surplus produce seeks this market, and if we can reduce the cost of transportation over the Erie canal 25 per cent, we add a much larger per cent to the territory that takes this route to a market. Every important reduction in tolls demonstrates this. The reduction made last winter, equal to 25 per cent on the most important articles, fully proves this fact. The tonnage moved on the New York canals the past year was 3,647,020 tons. The receipts this year are already 250,000 in excess of the past; which shows that the increase of tonnage has been much greater than the reduction of tolls. Nearly all the iron for western railroads has taken this route for the present season, in preference to that by New Orleans. The merchants of Louisville, Ky., for the first time are now receiving large supplies of their merchandise via the Erie canal; and we have no doubt that in a few years, the whole west, north of the mouth of the Ohio, will make use of the same route as their outlet to the seaboard.

One great reason operating strongly in favor of the Erie canal route, is the certainty with which merchandise can be forwarded, during the season of navigation, to its point of destination. The supply of water for this great work is abundant, even during the severest droughts; and accidents seldom occur that interrupt the navigation beyond one or two days. With the enlargement, which will give a depth of 6½ feet of water, its capacity for business will be unlimited. All similar works in this country are liable to have their business interrupted, either by freshets or droughts. Another fact equally in its favor, is the small cost by which it can be

reached from distant points. Large quantities of corn have been brought from Toledo to this city the present season, a distance of over 800 miles, for 13 cents per bushel, or \$4 50 per ton. At the same rate, flour could be brought for a little less than 50 cents per barrel from the same point; the same that it costs to transport a barrel from Lynchburgh to Richmond, 145 miles! We state these facts to show that the Erie canal is no guide for any similar work in this country, for the reason that no other canal presents the same conditions, as far as cost, route and connections are concerned.

For the American Railroad Journal.

In considering the different routes by railroad connection between Lake Ontario, and New York and Boston, the one first opened seems to be rather overlooked. From Albany to Syracuse, by double track railroad, is 147 miles, and from thence to Oswego is 35 miles—making 182 miles.

The Western and Worcester railroads together, constitute from Boston to Albany 200 miles of the most efficient line in New England; thus the distance by this route is 383 miles from Boston to Oswego.

From New York to Oswego the distance is 327 miles. It is well known that Oswego is the largest town on the American side of Lake Ontario. Its commerce is by far greater than any other town on our side. The navigation interest of Oswego is very large. In addition to this, is the fact that its manufacturing power is very great. There is probably more flour made at Oswego than at any place in our country. The mills are supplied directly from the great wheat growing States of the west, by vessels coming through the Welland canal. Oswego is easier reached from the west, than any town at the foot of the lake, and with the advantage of its milling power, it possesses great advantages. Now that the tolls are taken off the railroads, the trade by this route must increase, and it will be soon learned that this is the shortest line both to Boston and New York. ONTARIO.

#### Stonington Railroad.

We have received a copy of the annual report of the Stonington railroad, from which we gather the following facts. The receipts of the company for the year ending August 31, 1851, were:

Passengers.....	\$128,043 08
Freight.....	73,289 13
Mails and rents.....	5,445 67
Interest.....	470 56
	<hr/>
	207,248 44
Balance on hand August, 1850.....	7,727 32
Total.....	<hr/>
	\$214,975 76

#### EXPENDITURES.

Expenses and repairs.....	\$84,959 51
New Equipage.....	4,548 72
Interest.....	45,702 00
Bonds paid.....	41,785 00
	<hr/>
	176,995 23

Balance on hand.....	\$37,980 53
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The work of relaying the road is completed all but a mile and a half of the main track, and the turnout at Kingston.

The receipts from passengers and freight were.....	\$201,332 21
Last year.....	180,771 24

Increase.....	\$20,560 67
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of which two-thirds has been on local business. The total amount of freight is 87,046,078 lbs., of which 21,026,787 lbs. was way freight. The debt has been reduced during the year \$46,000. The entire debt of the company is \$699,546. The com-





**Delaware and Hudson Canal.**—The receipts of coal over the Delaware and Hudson canal, up to October, 1851, were 597,945 tons. To same date in 1850 341,068 "

Increase this year 256,877 tons.

**Georgia Railroad.**—Comparative statement of the earnings of the Georgia railroad, during the six months ending September 30, 1850 and 1851:

	Passengers.	Freights, mails, etc.	Totals.
1851.....	121,233 15	180,449 48	301,682 63
1850.....	115,290 54	160,893 27	276,183 81

Increase. \$5,942 61 \$19,556 21 \$25,498 82

**Philadelphia, Germantown and Norristown Railroad.**—This company has declared a half-yearly dividend of two per cent., being the second ever paid to the stockholders. The company is now out of debt, and they have just completed the largest depot in the United States at the corner of 9th and Green streets.

**Commerce of Philadelphia.**—The following is a comparative official statement of the number and class of vessels which have arrived at Philadelphia during the month of September, 1850 and 1851:

	1851.			1850.		
	For-eign.	Coast-wise.	Total.	For-eign.	Coast-wise.	Total.
Ships.....	15	1	16	9	0	9
Barks.....	11	19	30	11	17	28
Brigs.....	21	102	123	18	121	139
Schooners. 4	722	726	9	762	771	
Sloops...	332	332	577	577	577	
Steamers...	168	108	79	79	79	
Barges...	598	598	510	510	510	
Boats.....	822	822	912	912	912	
Total in						
Sept.....	51	2704	2755	47	2978	3025
August....	46	3173	3219	46	2579	2625
July.....	53	2720	2773	57	2288	2345
May.....	90	2750	2840	64	3059	3123
April.....	59	2448	2507	59	3016	3075
March....	64	1869	1933	53	1722	1775
February..	27	673	710	29	985	1014
January..	37	624	661	35	566	601

Total.... 490 19,762 20,252 486 16,109 16,595

The Evening Journal gives the annexed statement of the quantity of flour, wheat, corn and barley, left at tide water during the 2d week in October in the years 1850 and 1851, as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	106,450	217,754	41,191	169,559
1851....	115,267	158,378	217,163	153,583

Dec.... 8,817 59,376 Inc. 176,972 de. 15,976

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th Oct., inclusive, during the years 1850 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1850....	1,887,961	1,661,294	3,008,801	959,424
1851....	2,409,101	2,104,284	6,656,919	648,527

Inc.... 521,140 442,990 3,648,118 dec. 310,897

The aggregate quantity of the same articles left at tide water from the commencement of navigation to the 14th Oct., inclusive, during the years 1849 and 1851, is as follows:

	Flour.	Wheat.	Corn.	Barley.
	bbls.	bush.	bush.	bush.
1849....	1,958,940	1,408,070	4,431,553	489,984
1851....	2,409,101	2,104,284	6,656,919	648,527

Increase. 450,161 696,214 2,225,366 158,543

By reducing the wheat to flour, the quantity of the latter left at tide water this year, compared with the corresponding period of last year, shows an increase of 609,738 bbls. of flour.

**Erie Canal.**—The amount received for tolls on all the New York State canals during the 1st week in September, is \$112,753 83. Same period in 1850 126,410 79

Decrease in 1851 \$13,656 96

The aggregate amount received for tolls from the commencement of navigation to the 7th October inclusive, is \$2,511,295 68. Same period in 1850 2,288,601 12

Increase in 1851 \$222,694 56

**Coinage in the United States.**—In 1793, there was no coinage in this country, except a small amount of copper. The coinage of silver commenced October 15, 1794, and that of gold in 1795.

Total coinage of gold to the close of 1795. \$71,485  
" silver, " 370,684  
" copper, " 11,873

In 1796, the aggregate coinage was 192,129  
Aggregate coinage from 1796 to 1806. 479,125

During the year ending June 30, 1851, the following is the official statement of coinage:

	Gold.	Silver.	Copper.
Philadelphia....	\$41,035,079	411,733	89,771
New Orleans....	8,274,000	1,147,000	
Charlotte, N. C....	348,724		
Dablonega, Ga....	263,158		
Total.....	50,370,961	1,558,733	89,771

## Railway Share & Stock List;

CORRECTED WEEKLY FOR THE  
AMERICAN RAILROAD JOURNAL.

NEW YORK OCTOBER 18, 1851.

### GOVERNMENT AND STATE SECURITIES.

U. S. 5's, 1853.....	101½
U. S. 6's, 1856.....	104½
U. S. 6's, 1862.....	109½
U. S. 6's, 1862—coupon.....	114½
U. S. 6's, 1867.....	116½
U. S. 6's, 1868.....	116½
U. S. 6's, 1868—coupon.....	122½
Land Warrants.....	140a145
Arkansas 6's.....	52a53
Alabama 5's.....	91a92
Indiana 5's.....	79
Illinois 6's, 1870.....	65a68
Kentucky 6's, 1871.....	105a106
Massachusetts sterling 5's.....	105a106
Massachusetts 5's, 1859.....	100½
Maine 6's, 1855.....	103
Maryland 6's.....	102½
Michigan.....	—
Mississippi.....	—
New York 6's, 1855.....	103½
Ohio 6's, 1860.....	107
Pennsylvania 5's.....	91

### RAILROAD BONDS.

Atlantic and St. Lawrence, 6 per cent.....	85
Baltimore and Ohio, 1867.....	94½
Boston and Providence 6's, 1855.....	101
Boston and Worcester 6's, 1855, convertible.....	107½
Bost., Concord and Mont. 6's, 1860, mortgage.....	87½
Cheshire 6's, 1860.....	91½
Connecticut River 6's, convertible.....	89
Erie 7's, 1859.....	96
Erie 7's, 1868.....	108½
Erie income 7's.....	92
Hudson River 7's, 1853.....	101½
Michigan Central, convertible, 8's, 1856.....	104½
New York and New Haven.....	100½
Norwich and Worcester, mortgage, 1860.....	80a85
Old Colony, 1854.....	97½
Ogdensburg 7's, 1859.....	90
Portsmouth and Concord.....	80a85
Passumpsic 6's, 1859.....	94½
Rutland 7's, 1863.....	97
Reading mortgage, 1860.....	80
" " 1870.....	75
Sullivan, mortgage 6's, 1855.....	75
Vermont Central 6's, 1852.....	93
" " 6's, 1856.....	77
Vermont and Massachusetts 6's, 1855.....	85

### RAILROAD STOCKS.

[CORRECTED FOR WEDNESDAY OF EACH WEEK.]

	Oct. 15.	Oct. 8.
Albany and Schenectady.....	89½	90
Atlantic and St. Lawrence.....	60a65	—
Androscoggin and Kennebec.....	30a35	—
Boston and Maine.....	104½	102½
Boston and Lowell.....	109	109
Boston and Worcester.....	102	100½
Boston and Providence.....	84½	8 6
Bost., Concord and Montreal.....	40	—
Baltimore and Ohio.....	71½	—
Baltimore and Susquehanna.....	36	—
Cheshire.....	46	—
Cleveland and Columbus.....	—	—
Columbus and Xenia.....	—	—
Camden and Amboy.....	—	—
Connecticut River.....	60	—
Delaware and Hudson (canal).....	—	—
Eastern.....	95	92½
Erie.....	77	76½
Fall River.....	92½	93½
Fitchburgh.....	108½	108½
Georgia.....	—	—
Georgia Central.....	—	—
Harlem.....	68	65½
Hartford and New Haven.....	124	—
Housatonic (preferred).....	53	—
Hudson River.....	73	71
Kennebec and Portland.....	50a55	—
Little Miami.....	—	—
Long Island.....	15	14½
Mad River.....	—	—
Madison and Indianapolis.....	90	92½
Michigan Central.....	105	104
Montgomery and West Point.....	—	—
Michigan Southern.....	—	—
Manchester and Lawrence.....	75	89
Morris (canal).....	14½	13½
New York and New Haven.....	109	107
New Jersey.....	133	—
Northern.....	67	66½
Nashua and Lowell.....	107½	—
New Bedford and Taunton.....	111	—
Norwich and Worcester.....	52	48½
Norfolk County.....	8	10
Ogdensburg.....	31½	31
Old Colony.....	65	66
Passumpsic.....	72½	73
Pennsylvania.....	—	—
Pittsfield and North Adams.....	95	—
Philadelphia, Wilm'gton & Balt.....	26	26
Petersburg.....	—	—
Richmond and Fredericksburg.....	—	—
Richmond and Petersburg.....	—	—
Reading.....	56	53½
Rochester and Syracuse.....	105½	104½
Rutland.....	41	40
Stonington.....	40½	41½
South Carolina.....	—	—
Syracuse and Utica.....	123½	—
Sullivan.....	25	—
Taunton Branch.....	108	—
Troy and Greenbush.....	90	—
Tonawanda.....	—	—
Utica and Schenectady.....	127½	127½
Vermont and Canada.....	97	99½
Vermont Central.....	26	26
Vermont and Massachusetts.....	25	25
Virginia Central.....	—	—
Western.....	103½	102
Wilmington and Raleigh.....	—	28½
York and Cumberland (Pa.).....	20	—

### Railroad Iron via Quebec.

The Lawrenceburgh and Indianapolis railroad company have imported a quantity of railroad iron by way of Quebec. The following items show the cost of importation over this route:—

Freight from Bristol to Quebec, per ton.....	\$3 66
Insurance.....	98
Freight from Quebec to Montreal.....	\$1 00
" Montreal to Cleveland.....	2 50
Commissions at Quebec and Montreal. 1 00 4 50	
	\$9 14

To Sandusky or Toledo perhaps 25 cents per ton more. From the Lake to Cincinnati, on the railroad, \$5 per ton—by canal, \$3 per ton.

**Hudson River Railroad.**

The formal opening of this important work was celebrated on the 8th instant, by the observance of the ceremonies usual on such an occasion. The company had made the most elaborate preparation for the event; the weather was most favorable, and the day passed off without the slightest accident, and most delightfully to the excursion party.

The excursion train, with the stockholders of the company, the common council of the city of New York, and a large number of invited guests, left the Chambers street depot, at 7, and the depot at 32d street at 27 minutes past 7, a.m., and reached East Albany at 11:22, making the entire time consumed from 32d street, New York, to Albany, *three hours and fifty-five minutes*; and deducting the time lost in stoppages, makes the whole running time three hours and twenty-four minutes.

The locomotive which performed the work, is called the "New York," and was run by Samuel Kiersted, the engineer. The entire management of the train devolved upon Mr. J. D. Vermele, the conductor, who performed the work entrusted in a manner highly creditable to himself, and to the entire satisfaction of all.

All the officers of the company were on the train, including W. C. Young, Esq., who the day previous had been elected president, E. Jones, Esq., vice president, J. M. Hopkins, Esq., treasurer, and O. H. Lee, Esq., secretary and acting superintendent.

In a short time after reaching East Albany, the company were invited to partake of a magnificent dinner, prepared for the occasion, in the immense depot of the company at that place. This building is an octangular edifice, and of great extent. In the centre, tables had been arranged for the Press, and for the chief of the guests, and from these, long tables radiated in every direction to the walls.—By the polite invitation of Mr. Hingham, the superintendent, the ladies, of whom there were quite a number on the ground, were permitted to take a survey of the tables and fixings.

Edward Jones, Esq., chairman of the committee of arrangements, presided. At his right sat Gov. Hunt; on his left, Mr. Boorman, recent president of the company.

After ample justice had been done to these good things, and the demands of the keen appetites, caught by the exhilarating journey, had been satisfied,

Mr. Edward Jones, chairman, addressed the assembly as follows:

GENTLEMEN—We are assembled on this occasion to celebrate an event of general interest. The great work, which for several years past has engaged the attention of the public mind, has been prosecuted to a successful termination. That which was ridiculed by some, and regarded by many as impracticable, is at the present moment a fixed fact, and the completion of the Hudson River railroad becomes a marked point in the history of our internal improvements.

But whatever opinions may have been entertained as to the feasibility of this enterprise, now that it is completed, all present must admit that it will prove eminently useful. To locate a railroad along the banks of the noblest river, and subject to the competition of the most perfect steamboat navigation in the world, was a bold project, and though, perhaps, in its first conception, somewhat in advance of public opinion, it was nevertheless essentially necessary. The time had arrived when New York could no longer remain at ease, securely trusting to her natural advantages, unless she were prepared to yield the rich treasures of the interior as a prize to more active and more determined competitors, and the opening of this new and improved channel of communication is only the fulfilment of an actual requirement of the

present moment. And for the future, when our commercial metropolis, at no distant day, shall be doubled and trebled in its numbers, and the population and wealth and resources of the whole country shall be correspondingly developed, who can say that this avenue of trade, and others still in course of construction, shall be sufficient for the vast demands which will be made upon them?

If that great natural highway, on whose surface so gracefully, and so proudly floats the commerce of the State, should, by a stroke of Providence, have its fountains sealed up, and become an arid waste, the dire effects of so disastrous calamity on the pursuits of industry, could be appreciated by all, and would be felt far and wide. Yet what is here presented as a mere picture of the imagination, may be said to have hitherto had a reality, during a fourth or a third of every year, when that same highway lay fast bound in the icy chains of winter. It is true the laws of trade have been obliged to accommodate themselves to a stern necessity, and that which was unavoidable, had to be endured. But what a change must now ensue, and what a different aspect of life and activity must the valley of the Hudson hereafter assume, when its commerce, no longer subject to a periodic paralysis, and no longer dependent on the season for the movement of the waters, shall now run in an uninterrupted stream to the center to which it is destined?

It is right, gentlemen, that the day which ushers in an enterprise of such vast magnitude, and so beneficial in its influence, should not pass unobserved; and you have been invited, without any attempt at display on the part of the company, simply to view the result of their labors, and to join in a friendly interchange of sentiments on an occasion in which you are all more or less deeply interested. Permit me, therefore, as Chairman of the Committee of Arrangements, to extend to all present, on behalf of the directors, their hearty congratulations; to the stockholders, that their intentions as to the construction of the road, are successfully carried out; to the cities of New York, Albany and Troy, and places along the line, that new facilities of intercourse are opened to them; and to the State, that another of those great works is achieved, to which she may point with pride as the sources of her wealth and the monuments of her greatness. He then gave—

*The State of New York*—Unrivalled in her natural position, she now stands pre-eminent in her internal works.

To this sentiment, Gov. Hunt responded in a very appropriate manner, and gave at the conclusion of his remarks the following sentiment—

*The President and Directors of the Hudson River Railroad Company*—They have conquered every obstacle—may they "go on their way rejoicing;" we hail them as public benefactors.

A call was made for Mr. Boorman, who responded as follows:

Mr. BOORMAN responded as follows:—

He protested against the action of the chairman and his accessory, Gov. Hunt. They had called him up in the middle of this great room merely to corner him. I can't make a speech. I have always been a working not a talking man. All I can do is to give a short history of what brought me here.—New York had been famous for her railroad enterprises, when she found her sister city running away with her business. The first enterprise was the Harlem Company. After ten years it reached Spuytendevil creek, or Harlem. This consumed ten years. Then followed a charter for a railroad through the eastern part of the river counties. In 1841 Mr. Allen tried to get up a subscription among the moneyed men—I'm not one myself. Mr. A. opened a subscription. Six or eight subscribed.—Finding it lagged, Mr. A. said, hand me the paper; and he put down one-fourth of all subscribed. \$55,000 was all that was obtained.

At a later period, Samuel Stevens made another effort. In six weeks they got \$90,000. I took a humble part in both.

In '45, a gentleman in my eye called upon me, and said he understood I was for a railroad to Albany. I said yes. He then asked me if I ever heard of a survey of a road on the river. "What,

over the Highlands?" Yes, said he; and he handed me a little blue book, which I have kept ever since. I was convinced that this was the road, and I said I was ready. We got a new charter for an undefined route. We were opposed by that particular portion of the community which resides in Wall-st. We were beaten; kicked out and the Harlem road got the charter.

But the following Summer, a Convention was proposed for the Hudson river railroad. It was got up, and New-York sent two delegates (both self-constituted.) I was one, a personal friend was the other. A survey was ordered, and next Winter we got our charter, after hard work.

We succeeded in obtaining our subscriptions in March, 1846. The Company was organized with a capital of three millions. You know our history since.

I want to read the title of this little blue book, which induced me to go into the work. [Its title page was read. It was the report of a survey of a railroad on the banks of the Hudson, and it entered into an argument to prove that the road was feasible.]

That blue book is Richard B. Morgan's Survey of the route of the H. R. R. Gouverneur Kemble, of West Point, found out this engineer, and introduced him to the residents of Poughkeepsie. They induced him to make the survey.

Mr. Boorman closed by offering the following toast:

The citizens of Poughkeepsie, Gouverneur Kemble of Cold Springs, and R. P. Morgan, of Poughkeepsie, to whom the public are indebted for the pioneer effort which resulted in the construction of the most important railroad enterprise in the United States of America.

Brief addresses were also made by Ex-Governor Marcy, Hon. J. C. Spencer, Hon. A. C. Kingsland, Alderman Murphy of this city, and Gen. Ward of Westchester; after which Mr. Jones announced that the hour had arrived to start for New York. Three cheers were proposed for the President, and the company adjourned with three times three.

The return train left East Albany at 2:06½ p.m., and reached 31st street at 5:46 p.m. From this, 11½ minutes should be deducted for stops—making the running time 3 hours and 28½ minutes for 144 miles: the best time ever made in America. At 32d street the company debarked, gave hearty rounds of cheers for the engineer, conductor and superintendent, and separated, reaching home before dark, after travelling to and from Albany and enjoying a dinner, all by daylight. Such a performance, a few years since, was deemed a perfect impossibility. All those concerned in the management of this celebration fulfilled their duties excellently, and deserve public commendation. Everything went off harmoniously, regularly and promptly.

The Hudson River railroad company was organized in March, 1847, and during that and the next year, subscriptions to the stock were received amounting to \$3,110,500, of which \$2,384,290 was paid in. In 1847, the line was located as far up as Poughkeepsie, and the work was begun in Westchester county. For a considerable period after the organization of the company, it was much depressed by financial difficulties, but when the character and importance of the undertaking became more generally known, these obstructions passed away, and the confidence of the public and of capitalists was freely bestowed. The engineering department was managed up to August, 1849, by Mr. John B. Jarvis, and from his hands it passed to those of Mr. Wm. C. Young, president of the company.

The road to Poughkeepsie is located upon the banks of the Hudson river, and a vast amount of heavy rock cutting and filling, as well as tunneling, was required in getting through and around



the formidable mountain barriers that skirt the banks of the river for this distance. The work progressed slowly for many months, and considerable grumbling was heard as to the non-fulfillment of expectations as to opening. On the 30th of September, 1849, the road was opened from 32d street in this city to Peekskill, and on the last day of the year it was opened to Poughkeepsie, 75 miles from New York. On the opening of navigation in the spring of 1850, the company employed two steamers to run from Poughkeepsie to Albany, and established regular communication with the great western route via Albany and Buffalo, and since that period (a few weeks of ice excepted) this communication has been regularly kept up. That portion of the road between Poughkeepsie and Albany was put under contract in July, 1850. On the 16th of June the road was opened to Hudson; July 7th, to Oak Hill; August 3d, to Tivoli; and October 1st, to New York. The entire length of the road is 143½ miles, not including double track and sidings of 45 miles.

The whole cost of the road has been about \$10,000,000. In addition to this, at least \$1,000,000 more will be required to complete a double track over the whole line, which the company propose to lay next season.

So much for a brief statement of the opening ceremonies, and the early history and progress of this great work, which is second only in importance and in cost of construction, to the Erie railroad, among all the roads in the United States. It connects the two extremes of the great Hudson river basin, at one of which are collected, in the city of New York and its suburbs, at least 750,000 people, and at the other at least 100,000, in the cities of Troy and Albany. At the head of this basin, railroads radiate in all directions, and to these the Hudson River road stands as the trunk line, connecting them all with New York. The Hudson River road now opens to us on the north, a direct railroad route to Montreal, a distance of nearly 400 miles. Buffalo can be reached by this route by 469 miles, exactly the distance from this city to Dunkirk by the Erie road. When the improvements between Albany and Buffalo shall be completed, the distance by railroad, between the latter city and New York, via the Hudson River road, will be reduced to 444 miles.

#### Charleston and Memphis Railroad.

The requisite amount of stock in this road, to authorise the commencement of the work of construction, by the terms of subscription, having been obtained, viz., \$2,500,000, the company are now taking active measures for the vigorous prosecution of this great enterprise. One of the directors, Mr. Brinckley, has gone to Europe to purchase iron sufficient for the Lagrange and Tuscumbia road, which together make an aggregate of about 100 miles. The Lagrange road, as it is termed, was graded many years since and then abandoned. The old work can now be rendered available at a very slight additional expense. The Tuscumbia road is laid with a flat bar, but is in a very dilapidated condition. By supplying the above divisions with a heavy rail, they can be brought into immediate and profitable use. If the work of construction shall be prosecuted with the same energy that has characterised the efforts of the company in getting up their subscription, the Southern States will soon enjoy an uninterrupted railroad communication between the Mississippi and the Atlantic.

#### Ohio and Mississippi Railroad.

The Chief Engineer of this road, E. Gest, Esq., of Cincinnati, has completed a preliminary survey of the route of the western, or Illinois division of this road, extending from Vincennes, on the Wabash, to the Mississippi river, opposite St. Louis, a distance of 143½ miles. The entire cost of this division, with a suitable equipment, is estimated at \$3,037,107 50, or \$21,204 per mile. Of the leading items of cost, the graduation and masonry is put down at \$1,065,859; the superstructure at \$1,226,097; equipment, \$390,450; suspension bridge at Vincennes, \$130,000. The route, as might be expected, is very favorable for a railroad, being remarkably direct, with easy grades. The survey, says the report, demonstrated the entire practicability of a road across Illinois, between St. Louis and Vincennes, without any curve whatever, and with no grade exceeding 26 40-100 feet to the mile, and at reasonable cost, while at the same time they indicate that the line can be made to conform to the established business places on the line of the several counties through which it passes, without materially affecting its merits as a great highway.

We copy the following from the report of the engineer in reference to the crossing of the rivers and bottoms on the route:

I beg further to remark, that the characteristics of the streams which the road encounters are peculiar, and casually observed would be considered as presenting formidable barriers to its construction, yet when studied they at once assume that character which allows them to be effectually crossed without difficulty. The country is so flat, and the descent so gradual, that it is impossible for the streams to carry off the water at the breaking up of winter and during unusual falls of rain.—The consequence is, that the low bottoms on either side are frequently inundated to the depth of from one to seven feet, forming immense ponds of reservoirs, which are gradually vented. These ponds are without currents, excepting where the principal depressions occur in the low bottoms, consequently they are easily and safely crossed, by embankments thrown up to such a height as will prevent the water overflowing them during extreme rises; excepting where the main channel of the stream occurs, which must be bridged, care being taken to allow ample water way.

The American bottom, between the Mississippi and Bluffs has nearly the same characteristics, and no danger is to be apprehended from confining the Mississippi to its legitimate channel, by the construction of an embankment across it, and terminating on Bloody Island. But two things are absolutely necessary, first that the bank will be built to such an elevation as will preclude the possibility of the water going over the top of it, and second, that its termination be not too far in the river, so as to contract the stream too much; the termination should be constructed of crib work filled with stone, built on piles, if necessary, to prevent its washing away. The bank, to be made perfectly secure, should be built to the bluffs for a double track thirty feet wide on top. While at St. Louis in the spring, from the observations I then made, I concluded that the dike or pier then in progress of construction from Illinoistown to Bloody Island, contracted the river too much, and was not of sufficient elevation—not having seen it since the freshet, I am not so well able to judge if my inferences were correct. Should a flood occur as high as that of 1844, and the river be contracted too much, either the pier must give way, or the buildings on the Missouri shore be severely damaged by the current. It is important for the security of the work that there be no culverts or bridges under the road bed between the end of the pier and the bluff, as they will certainly be washed out during extreme floods.

Owing to the embankment having to be made mostly from earth taken from the side, a ditch sufficiently wide and deep can be left on either side to drain the bottom without culverts, &c.; and Cahokia creek should also be made to enter the river

above it. It is a question of calculation to determine the exact width to which the Mississippi can be safely confined, but my impressions are, that the pier built by the city and ferry company, extends some 800 or 1000 feet too far into the river. It will be necessary for the railroad pier to extend out as far as the ferry pier, otherwise the railroad boat will be unable to land against it, as a deposit of mud will be caused by the extra projection of the other. I consider it important that a connection be made directly with the river, and see nothing to prevent it. Such an arrangement with a good bias will be found to facilitate the working of the road materially, and be also the most economical as to time and expense.

I doubt not that the day is near when the Mississippi will be bridged, and the trains pass across to the city. The numerous improvements made by Mr. C. Ellet and J. A. Roebling, in suspension bridges, has made it perfectly practicable, and all that is required to carry it out successfully, is the funds; in fact, cable suspensions are the only secure means of bridging large streams, as they require, in most cases, no obstruction to be made in the water way.

I would here call your attention to the track; the part of a railroad the most essential of all to be made as perfect as possible. It is a settled question taking everything into consideration, that the cheapest and best track is made with a heavy iron rail, laid on ties which rest upon a bed of gravel or coarse sand of not less than 20 inches in depth, experience has shown that even these did not secure a perfect structure—for the want of connection where the two bars came together made them settle, and has stimulated the inventive genius of two eminent engineers to provide a remedy—the first is the new compound rail, manufactured by J. S. Winslow, of New York; the second is the three part rail, designed by Benj. H. Latrobe, of the Baltimore and Ohio railroad, and manufactured near Baltimore. Either of which I would recommend to your favorite consideration. Both have been tried, the former on two or three lines, and approved of by all, the other on the Baltimore and Ohio railroad, I believe has given every satisfaction.

There can be no question of the importance of the above road, not only to the two termini, Cincinnati and St. Louis, and to the intermediate country, as well as to the business community generally. Whether sufficient means have been secured to warrant the commencement of the western division, we are not informed. The leading directors and stockholders on this portion of the line reside in St. Louis. That city must contribute the principal part of the means required to build the road. This it could readily furnish if the public spirit of its citizens bore any relation to their pecuniary ability. We fear that they are lacking in the former from the difficulty experienced by the Pacific railroad in securing the small amount of stock required by that company. We hope, however, to be agreeably disappointed.

#### Harlem Railroad.

This road will be opened to Albany by the first of December next, so that we shall soon have two parallel lines to that city. It will be a few miles longer than the Hudson River, but the Harlem company expect to make as good time as the former road, so that either route will suit the convenience of the traveller. The Harlem has the advantage in the cost of construction, this being only about one-half of that of the Hudson River road.

The Harlem road will probably be extended north from Chatham, its present point of intersection with the Western, so as to connect with the Vermont Valley railroad, forming very nearly a straight line to Rutland, Vermont. Such an extension would add very largely to the convenience of the travelling and business public, and to the value of the stock of the road.

**Atlantic and St. Lawrence Railroad.**

Our readers will find in another column an advertisement of the letting of the last section of this work. It is the intention of the company to complete the road in a year from the present time, in season for the winter business of 1852-3. The Canadian company are pushing their portion of the line with vigor, and as they possess abundant means, there is no doubt of their being able to meet our own people at the time named. Within one year, therefore, we may confidently count upon seeing another railroad connecting the waters of the great lakes with the Atlantic ocean.

We have frequently referred to the above road as an excellent illustration of northern enterprise and energy, and of the steady perseverance with which they push forward their works when once undertaken. The city of Portland, a town of only 15,000 inhabitants before the railroad was started, found themselves overshadowed by its formidable rival, Boston, which, by the railroads she had thrown out into every part of New England, was gradually drawing from the former its very heart's blood. As every Atlantic city looked to the trade of the west as the great source of prosperity, the people of Portland, in casting about themselves for some means by which to retrieve their position, found that they were much nearer, geographically, to the St. Lawrence, than any other sea-port; and, acting upon this supposed advantage, determined to play a bold game, and strike for the prize, for which so many were contending. The co-operation of Montreal was secured, a charter was obtained, and in the little town of Portland \$1,000,000 of cash subscriptions were raised, which were promptly paid in, and expended upon the road.—This sum was nearly sufficient to carry the road to a paying point. The city then obtained authority to loan its bonds to the railroad company for \$1,500,000. They were readily disposed of, either at a premium or at par, though only 6 per cents, making the amount furnished by the city of Portland alone, by its stock subscriptions, and its credit, \$2,500,000. All this was accomplished by a town of less than 20,000 people. What is still more remarkable, the credit of the city was not affected in the least degree by the load it assumed. The portion of the road in the United States will cost about \$30,000 to the mile. Of this sum, the contractors have taken one-quarter in stock upon the greater part of the line, leaving the balance to be raised upon the company's bonds. In this way has the city of Portland secured to herself a direct railroad communication with the St. Lawrence by a much shorter route than any other, and by one that is vastly superior, as far as grades and curves are concerned, to any one that can be built from any New England seaport. In addition to this it may be said, that probably no work of equal magnitude has moved along so quietly and steadily, without embarrassment, and without ever being cramped for means. The project has grown in strength and in public confidence each succeeding day. In the outset it was the laughing stock of every person not immediately interested in it. It was regarded as one of the wildest schemes ever undertaken in this country, and as one that would surely bring ruin and disgrace upon its projectors.—So strong was this feeling, that hardly a dollar of stock could be obtained out of Portland, and not a cent out of the State. The road now takes rank among the first in the country, and is regarded by all its rivals as a powerful competitor for the prize for which they are contending. As we said in the out-

set, there is no better monument in the United States of the public spirit, the enterprise, of the steady perseverance of the people of the Northern States, whose leading traits are, to be intimidated by no obstacle however formidable, nor discouraged by defeat.

The efforts of this company have been well seconded by the contractor for the road, John M. Wood, Esq., who has built nearly the whole road, and who is the sole contractor for the last 120 miles. It requires no small degree of ability to successfully execute a work of the magnitude of this, requiring the expenditure of vast sums of money, and the superintendence and oversight of large bodies of men. Mr. Wood has pushed forward his work vigorously and successfully, to the entire acceptance, we believe, of the company, and with a reasonable profit we presume to himself.

**Ohio and Pennsylvania Railroad.**

The receipts on this road west of Pittsburgh for the week ending Sept. 24th, were \$1,650. The Pittsburgh Gazette states that the success of the road exceeds the most sanguine expectations of its friends, and adds:—

As to the exact time when the road will be opened to Alliance, there is some uncertainty. Great efforts are making to push it forward with all the dispatch possible. Some portion of it will probably be opened in a month or six weeks. We think, from our knowledge of the state of the work, that we may safely calculate the road will be opened through to Alliance by the 15th of December, and to Massillon by the 1st of January. The iron is now laid down several miles west of Brighton and east of Alliance, and a third gang of track-layers has been put on the intermediate ground, to prepare the superstructure for the iron. A construction train now runs regularly from Brighton westward, and as soon as there is water enough in the Cross-cut canal a locomotive will be sent to Alliance to be employed in the work of construction. Most of the contractors have finished their jobs of grading and bridging, and it is confidently expected they will all be out of the way within thirty days.

Before the year closes, then, we shall have continuous railroad communications with Cleveland and Cincinnati, and with the vast net of railroad now in operation in Ohio, and although we shall not reap the full benefit of our great enterprise until it is finished, and we have more direct communication with Cincinnati, yet a connection with Cleveland and Massillon will open up to us a trade and travel fully justifying all the labor and money which have been expended.

**Travel West.**

The New York lines of railroad have heretofore monopolized the travel between the seaboard and the west, but, for the coming winter, the Pennsylvania works will bear off this prize. Passengers can now go by railroad from Philadelphia to Johnston, west of the mountains. From Pittsburgh, the Ohio and Pennsylvania will soon be extended, so as to connect with the Cleveland and Pittsburgh railroad, thus opening a continuous line of railroad between the latter city and Cincinnati. There will soon be only a small gap of unfinished line of railroad between Philadelphia and Cincinnati.

The Hudson River and the Erie railroads give us railroad connections with Lake Erie, but the road between Buffalo and Cleveland cannot be brought into use the coming winter, and the distance to be traversed by stage will be too great not to give for the present a decided advantage to the Pennsylvania route. By another winter, the entire Lake Shore railroad, from Buffalo to Cleveland, will be completed. This will give us a convenient route west over our own lines.

**Kentucky.**

**Louisville and Nashville Railroad.**—The directors of this company, at a recent meeting held at Louisville, resolved that they had no preference for either of the proposed routes, known as the upper and lower, the former running by way of Bardstown and Glasgow, and the other by way of Bowling Green, and east of Muldro ridge, as it is called, but that they will locate the road upon which ever route the necessary stock can be obtained, and if they find the stock can be raised on more than one route, that they will be governed in the location by what they shall deem the best interests of those concerned in the construction of the road.

It is estimated that the road will cost \$3,000,000, and that it will require four years to construct it. Of this sum, it is expected that the city of Louisville will furnish \$1,000,000, and the counties on the route, and the city of Nashville, \$2,000,000 more.

We see by the Kentucky papers that the people on the upper, or Glasgow route, are taking steps to secure a thorough canvass of all that portion of the State interested in having that one selected. The friends of the other route will, we presume, put their shoulders to the wheel to show what they can do. The rivalry may result in building two lines for a part of the distance. Certainly the people on both routes are able to construct their respective lines.

We are very glad to see that the people of Kentucky and Tennessee are arousing themselves to an appreciation of the importance of the above road, and to witness the determination which is everywhere manifesting itself, to build it in the shortest possible time. When opened, it will, in connection with other lines now in progress, and which will be completed in advance of the Louisville and Nashville, form a direct line of railroad from the great lakes to the Gulf of Mexico. Such a line would be a strong bond of union between what are now widely separated, and somewhat discordant extremes.

**Illinois.**

**Central Railroad.**—The action of this company is creating much dissatisfaction with the people of this State. The city of Chicago has just voted \$10,000 as "sinews of war" to compel the company to run direct to that city, instead of bearing toward the Indiana line, where the road can be met by a branch, running east, thus practically avoiding that city. The company estimate the value of the lands granted by Congress to be greater than the cost of the road, giving the whole project in the hands of the parties now in possession of the charter, the air of a grand speculation. The people of Illinois contend that an exorbitant price is put upon the lands; that they should be sold at a reasonable rate; and that the object of the grant was to benefit them, not a company of New York capitalists. There is undoubtedly much reason in their complaints, and a collision between the company and the State authorities seems very probable. The direction which the munificent grant of land by Congress to the State of Illinois has taken, will be likely to be fatal to similar grants to other States, which are now earnestly prayed for. If New York capitalists are chiefly to be benefitted by such grants, Congress will be very slow in making them, no matter how great the advantage to the State receiving them. We think that Mr. Neal's pamphlet, though perhaps well calculated to enable the company to sell its bonds, is but poor-



ly fitted for the meridian of Illinois, and will strongly prejudice Congress against similar grants.

#### Illinois.

**Aurora Extension Railroad.**—We learn from the Aurora Beacon, that on the 8th ult., the newly organized corps of engineers of the Aurora Branch railroad commenced the preliminary survey of the route from that place to some point south of Knox's Grove, agreed upon for intersecting the Galena branch of the Central railroad. The party is headed by George W. Waite, of the Galena and Chicago Union railroad, who has charge of the road, under Mr. McAlpine, chief engineer, and is assisted by Allen Stack, formerly assistant on the Aurora branch, James Young and J. L. Estes.

Knox's Grove is situated about 23 miles north of La Salle, and 5 or 6 miles south of a due west line from Aurora. The distance from Aurora to Knox's Grove is but little over 40 miles.

#### Kentucky.

**New Railroad from Louisville to Cincinnati.**—A project, says the Cincinnati Gazette, has recently been started in Louisville and elsewhere in Kentucky, to bring the cities of Cincinnati and Louisville within less than four hours of each other, by railway. The project originated with Mr. George G. Dicken of Kentucky.

He proposes to tap the Louisville and Frankfort at Eminence, in Henry county, and pass through New Liberty, in Owen county, and through Boone county, to Covington. The line passes through a populous and well cultivated portion of Kentucky. This Mr. Dicken says, would "at once connect Louisville with Cincinnati, and "all the railways in Ohio pointing eastward."

"It would cause all the travel for and from the East and Southwest to pass through Louisville.—It is strange this important link has so long been overlooked. It is not generally known that the distance from Louisville to Covington is less than one hundred miles, and that forty miles of this distance—from Louisville to Eminence—is now completed and in successful operation. So that by building only sixty miles of road, through the best and richest part of Kentucky, over a route generally highly favored by nature for the construction of a railroad, Louisville and Cincinnati would be brought within less than four hours of each other.

He estimates the cost of this road at \$15,000 a mile at most, and is confident, it will be "one of the best dividend paying roads in the United States." The project demands examination, and the present is a favorable time to look into the matter.

#### Indiana.

The Indianapolis and Belfontaine road was opened on the 9th inst., by an excursion, carrying thousands to Chesterfield, forty-two miles from the Capital; the work is progressing. This road when completed will give to Central Indiana, a direct outlet east to the connection with the Sandusky, Cleveland, Pittsburgh and Columbus roads, opening the great thoroughfare from the Lakes and Atlantic cities to the Capital of the State of Indiana, and by the roads centering there, to the lower Ohio, Wabash, and Mississippi rivers.

#### Georgia.

**The Railroad connection.**—The connection between the Central and South-western roads, says the Macon Journal, has been so far completed that several trains of cars have passed and repassed from Savannah to Oglethorpe. The work upon the Macon and western branch is heavier than on the above, and will not be completed in several weeks. It will be pressed forward, however, as fast as possible, and we trust that the entire track, depots and fixtures will be finished in ample time to secure the trade of upper Georgia, Alabama and Tennessee.

#### Michigan.

**Detroit and Pontiac Railroad.**—This important thoroughfare has, under its new auspices, taken a start, which, we believe, is destined to make it one of the most extensive, well built, and best paying roads in the Union. The new board of directors are among the most enterprising men in this and the State of New York, and the Superintendent is an active and thoroughly experienced business man.

The election of officers of the Detroit and Pontiac railroad, took place on Monday, when Hon. H. N. Walker having declined a re-election, Nelson P. Stewart was chosen President.

David Smart, E. A. Brush, N. P. Stewart, H. N. Walker, Detroit; A. Williams, H. C. Thurber, Pontiac; Horace White, Hamilton White, Syracuse, N. Y.; J. B. Plum, Albany, N. Y.

H. N. WALKER, Sec'y and Treas'r.  
Wm. Werden, Superintendent.—*Detroit Free Press.*

### Notice to Contractors.

*Atlantic and St. Lawrence Railroad.*

**THE** Sixth and last Division of the Atlantic and St. Lawrence railroad will be placed under contract on the 10th day of November next, and proposals will be received until that date by the subscribers, at Sargeant's Tavern in the town of Northumberland, N. H.

Plans and profiles will be in readiness for examination at the Engineer's Office in Northumberland, on and after the 1st of November.

This Division extends from the Connecticut River in the town of Stratford, N. H., to the boundary line of Canada, a distance of about forty miles.

No Spirituous Liquors will be allowed on the work, and bids of contractors who have heretofore failed to pay their laborers, on this, or any other work, will not be considered.

Cash payments will be made monthly, reserving ten per cent. until the final completion of the contract.

JOHN M. WOOD & CO.

October 14th, 1851.

### To Stone Masons.

**THE NEW ALBANY AND SALEM RAILROAD** Company have about 10,000 c. yards of Abutment Masonry to let at private contract, to be completed by the 1st of July, 1852.

To contractors who can produce testimonials of character for ability as STONE MASONS, fair, remunerating prices will be given.

Early applicants, by securing the work now offered, will gain advantages over competitors for the erection of an additional 15,000 yards, to be let out early next spring, in bridging the streams between Bedford and Michigan City, via Bloomington, Gosport, Crawfordsville and Lafayette, (the most productive and healthy region in Indiana,) by the knowledge they will have acquired of the resources of the country.

Application may be made in person, or by letter addressed to the undersigned, at New Albany, Indiana.

S. B. WILSON, Engineer.  
Engineer's Office, New Albany, }  
Sept. 29th, 1851. }

### Railroad Iron.

**THE** undersigned are prepared to enter into contracts now at specific prices, to deliver Railroad Iron during the coming Winter and Spring, free on board at the shipping ports in Wales, or at ports in the United States.

CHOUTEAU, MERLE & SANFORD,  
Sept. 30, 1851. No. 51 New st.

### Railroad Iron.

**THE** undersigned offer for sale 1000 tons Railroad Iron, (about 56 lbs. to the yard,) now at Brooklyn.

CHOUTEAU, MERLE & SANFORD,  
Oct. 1, 1851. 51 New st.

### STATE OF NEW YORK.

**SECRETARY'S OFFICE, ALBANY,** August 27, 1851.—To the Sheriff of the County of New York. Sir:—Notice is hereby given that at the General Election, to be held in this State, on the Tuesday succeeding the first Monday of November next, the following officers are to be elected to wit:

A Judge of the Court of Appeals, in place of Samuel A. Foot.

A Secretary of the State, in place of Christopher Morgan.

A Comptroller, in place of Philo. C. Fuller.

A State Treasurer, in place of Alvah Hunt.

An Attorney General in the place of Levi S. Chatfield.

A State Engineer and Surveyor, in the place of Hezekiah C. Seymour.

A Canal Commissioner, in the place of Charles Cook.

An Inspector of State Prisons, in the place of Alexander H. Wells.

All whose terms of service will expire on the last day of December next.

Also a Justice of the Supreme Court, for the First Judicial District, in the place of James G. King, whose term of service will expire on the last day of December next.

Also a Senator for the Third, Fourth, Fifth and Sixth Senate Districts, in the place of Richard S. Williams, Clarkson Crolius, James W. Beekman, and Edwin D. Morgan, whose term of service will expire on the last day of December next.

County officers to be also elected for said County. Sixteen Members of Assembly.

A Register, in place of Cornelius V. Anderson.

A Recorder, in the place of Frederick A. Tallmadge.

Two Judges of the Superior Court, in the place of Thomas J. Oakly and John L. Mason.

A Judge of the Court of Common Pleas, in the place of Daniel P. Ingraham.

A Surrogate, in the place of Alexander W. Bradford.

A Commissioner of Streets and Lamps, in the place of Jacob L. Dodge.

Two Governors of the Alms House, in the place of Simeon Draper and Francis R. Tilton.

All whose term of service will expire on the last day of December next.

Also, there is to be elected a Justice for each of the six Judicial Districts, into which the city of New York is districted, pursuant to Chap. 614, Laws of 1851.

Yours respectfully,

CHRISTOPHER MORGAN.

Secretary of the State.

**SHERIFF'S OFFICE, AUGUST 28, 1851.**—I hereby certify that the above is a correct copy of the notice of the general election, to be held on the Tuesday succeeding the first Monday of November next, received this day from the Hon. Christopher Morgan, Secretary of the State.

THOMAS CARNLEY,

Sheriff of the City and County of New York.

N.B.—All the public newspapers within this county will please publish this notice once in each week until the election, and send in their bills for advertising the same as soon as the election is over so that they may be laid before the Board of Supervisors, and passed for payment.

### RAILROAD SPRINGS.

**Fuller's India-rubber Springs.**

**THESE** are now made in our own Factory, of the best materials. Each spring is guaranteed to perform the required work. Purchasers guaranteed against adverse claims.

Car Builders will save great expense by calling at the office of the Company.

23 Courtlandt St., New York.

### To Railroad Companies.

**THE** undersigned has discovered and patented an imperishable, cheap, and sufficiently elastic substance, to be introduced between the sill and rail, so that the stone sill can be used in place of the wooden sill: entirely overcoming that rigidity where the rail is laid directly on stone. Address

J. B. GRAY, Philadelphia,  
July 10, 1851. 4m

### Bridges & Brother, DEALERS IN RAILROAD AND CAR FINDINGS,

64 Courtlandt street, New York.

Having established a general Depot for the sale of articles used in the construction of Railroads, Locomotive Engines and Railroad Cars, we would invite your attention to our establishment. We have already in store a good assortment of CAR FINDINGS and other articles used in the trade, and feel justified in saying, that should you desire anything in our line, we can supply on terms perfectly satisfactory, and in the event of your desiring to order, you may feel assured that your terms will be as good as though you were here to make your own purchases.

Among our goods may be found Railroad Car Wheels, Axles, Jaws and Boxes, Nuts and Washers, Bolts, Brass Seat Hooks and Rivets, Window and Blind Springs, Lifters and Catchers, Door Locks, Knobs and Butts, Ventilators and Rings, Car Lamps, Coach and Wood Screws, Jack and Bed Screws and Babbitt's Metal; also Plushes, Damask, Enameled Head Linings, Cotton Duck for Top Covering in width sufficient without seams, Curled Hair and all other articles appertaining to cars.

Also a new and valuable CAR DOOR LOCK, well adapted to the Sliding Door. This is decidedly the best yet introduced.

LOCOMOTIVE ENGINE LANTERNS, the best article made in the country. Whistles, Gauge and Oil Cocks, Hemp Packing, American, Russian and Italian. We are also agents for Lightner's Patent Journal Box for Car Axles, that invaluable invention, for the economical use and preservation of Car Journals.

Coach VARNISH and Japan of the best quality.

We would also offer our services for the purchase as well as for the sale of goods on commission.—Both members of our firm have had the experience of many years in the manufacture of Railroad Cars, and our Senior was a member of the well known house of DAVENPORT & BRIDGES, Car Manufacturers, Cambridgeport, Mass. With our knowledge of matters pertaining to Railroads, we feel quite confident in giving satisfaction to both buyer and seller, and hope that through assiduity and attention to any business entrusted to our care we shall merit a continuance of confidence and patronage.

BRIDGES & BROTHER.

July 23, 1851.

### Lightner's Patent Axle Boxes.

THE Undersigned are Agents for, and offer for sale, *Lightner's Patent Axle Boxes*, for Railroad Cars and Tenders, which have, by thorough experience, been demonstrated to be one of the most valuable improvements ever introduced in Locomotion. The saving effected in oil alone, will in a few months pay the first cost of these boxes, independent of other advantages. They are now in use upon the following, among other roads, viz:

Boston and Worcester, Boston and Providence, Boston and Fitchburg, Nashua and Lowell, Providence and Worcester, Northern, N.H., Cheshire, Manchester and Lawrence, Concord, N.H., Concord and Claremont, Ogdensburg, (Northern, N.Y.) Stonington, New London Willimantic and Palmer, New Jersey Central, New Hampshire Central, Worcester and Nashua, Fitchburg and Worcester, Connecticut and Passumpsic, Lowell and Lawrence, Salem and Lowell, Wilton Branch, Newburyport.

Below will be found the certificates of a number of gentlemen, whose opinions will be good authority in every part of the country.

Office Boston and Prov. R. R., }  
Boston, Dec. 28, 1849. }

Mr. JOHN LIGHTNER,

Sir,—It affords me pleasure to say, that after two years' trial of your boxes, I am fully and entirely satisfied of their superiority over any other pattern we have used. This superiority consists in economy of oil and freedom from "heating." I have tried every pattern of box in use, of any note, and do not hesitate to say, that you have devised one which in every respect combines greater advantages than any other within my knowledge; these advantages are so manifest, that I am fitting up all

our cars with your boxes, as fast as practicable.

Annexed, is a statement of an experiment with your boxes, the result of which may be of use to your interests.

Ten passenger cars, running 72 wheels, fitted up with Lightner's boxes used 41½ pints of Patent Oil, at 50 cts. per gallon, ran 43,099 miles, equal to 5-15 pints per wheel for 43,099 miles. Speed, 30 to 40 miles per hour.

Very respectfully yours,

W. RAYMOND LEE, Supt.

I have examined the above statement of Mr. Lee, and fully concur with him in his opinion of the superiority of Lightner's box.

GEORGE S. GRIGGS,

Supt. Machine Shop B. & P. R. R.

Boston, July 26, 1849.

This is to certify that J. Lightner's axle boxes for railroad cars and locomotive tenders, have been in use on the Boston and Worcester railroad one year, and I unhesitatingly pronounce it, in my opinion, the best and most economical one in use, requiring less oil, of easy application, not susceptible of derangement, as in most kinds in use. When requiring repairs or renewal, the same may be done in one-fourth of the time usually occupied for that purpose. The box requires oiling not oftener than once a month—is kept quite free from dust, and consequently wears much longer than those generally in use.

D. N. PICKERING,

Supt. Motive Power, B. & W. R. R.

Office of Boston Locomotive Works, }

December 12th, 1849. }

The Boston Locomotive Company have been using J. Lightner's patent axle boxes under the tenders of their engines for several months, and find them more highly spoken of by the railroad companies that have used them in regard to economy in the use of oil, their durability and their ease of adjustment, than any other boxes which they have used. We therefore do not hesitate to recommend them to all railroad companies.

DANIEL F. CHILD,

Treas. Boston Locomotive Works.

Taunton Locomotive Works, }

Taunton, July 7, 1849. }

Mr. H. F. ALEXANDER,

Dear Sir,—Your favor of yesterday came to hand in which you ask what success we have met with, in using Mr. Lightner's patent box for cars, engines, &c.

We have put it in use on the Boston and Providence railroad, New Bedford and Taunton Branch railroad, Central railroad, N. J., Norfolk County, Rutland and Burlington, and as yet we have not had one complaint from them; and from what we have used of it, and witnessed, we do not hesitate to say that it is superior to anything in use for that purpose. It is simple in its construction, and easy of access, and the reservoir is held close to the shaft, and the oil and journal is perfectly secure from dust; they will run from four to six weeks without replenishing the oil. The brass in the box is changed very much easier than by any other plan that we have seen.

Very resp. yours,

W. W. FAIRBANKS, Agent.

Office Providence & Worcester R. R. Co., }

Providence, Dec. 17th, 1850. }

H. F. ALEXANDER, Esq.,

Sir,—The "Lightner patent boxes" for cars and locomotives have been in use under a portion of the passenger cars and engines of this company for upwards of two years, and have given very great satisfaction.

Though combining many excellent qualities, their great superiority consists in the economy of oil.

The result of experiments upon this road shows the consumption of oil by the use of this box, to be not more than one sixth part the quantity consumed by the use of the common box.

With the common box, eight passenger cars, 64 wheels, running 90 miles per day, consumed in 12 months 520 gallons of oil, being an average of 84 gallon per wheel per annum.

With the Lightner box the same cars running the same number of miles per day, during the same space of time consumed 73½ gallons of oil, being an average of 1½ gallon per wheel per annum.

So manifest are its advantages over any other box used by this company, it is intended to place it under all our cars as soon as practicable.

Besides the saving of oil, as they afford complete security from dust, we think them more durable than any other box in use.

Another advantage resulting from the use of this box is, cars run more easier than with the common box. The saving in fuel which it would effect, would of itself, we think be a sufficient inducement to use this box in preference to any other known to us.

Very respectfully,

ISAAC H. SOUTHWICK, Supt.

JOHN B. WINSLOW,

Supt. Machine Shop, P. & W. R. R.

Cambridgeport, April 5th, 1851.

H. F. ALEXANDER, Esq.

Sir,—This may certify that I have been engaged in the manufacture of railway cars since 1834, and have built for the different railroad companies cars of all descriptions to the amount of three millions of dollars, and have used on the above cars all kinds of journal boxes, and find that none give better satisfaction than the "Lightner patent box," both on account of the saving of oil and the arrangement for taking out and re-placing the composition by means of the sliding key, and other conveniences which no other box possesses.

Yours respectfully,

CHARLES DAVENPORT.

Worcester, March 17th, 1851.

H. F. ALEXANDER, Esq.

Dear Sir,—This is to certify that I have been for some years past engaged in building cars, and that I have tried most, if not all of the patent boxes, and have found Lightner's patent superior to all others as far as the saving of oil is concerned, also the ease with which they are fitted and exchanged in case they get out of order.

For the last three years, I have put them under all of the cars I have built, and in every instance they have given the most entire satisfaction.

Yours truly,

OSGOOD BRADLEY.

Office Union Works, So. Boston, }

May 23d, 1851. }

This certifies that I have applied Mr. J. Lightner's patent axle boxes to my locomotives and tenders for the past two years. I consider them superior to all others,—economical in their use, and possessing many important advantages not found in any other boxes.

SETH WILMARTH.

Office 15, R. R. Exchange, Boston, }

June 1, 1851. }

This is to certify, that we have known the success of Lightner's patent journal boxes upon various roads in New England the past three years, and have been led to examine their peculiar construction.—We are well satisfied of their merits, and have adopted them upon our small gravel cars, and take pleasure, as we ever have done, in recommending their use upon all roads where we are employed in the construction.

GILMORE & CARPENTER,  
Contractors.

Amoskeag Manufacturing Co. Machine Shop, }

Manchester, May 31, 1851. }

H. F. ALEXANDER, Esq.

Dear Sir,—We are using the Lightner box on all the engines and tenders we build, and we are satisfied that it is the best box in use, and recommend the same to all those who purchase engines at our works.

Yours respectfully,

O. W. BAYLEY, Agt.

This is to certify that the Fitchburg railroad company having become satisfied of the superiority of J. Lightner's patent Axle Boxes for Railway Cars and Locomotive Tenders adopted the same



and are bringing them into general use upon their road.

One year's experience with the above improvement, has fully convinced me that there has never been anything offered to the public for that purpose which possess such intrinsic value; in fact, this is an improvement which seems to overcome all the difficulties found in all the various kinds now in use. It possesses very many advantages over all others: Some of which are [first] the first cost is much less than that of most boxes in use. [Secondly] 75 per cent is saved in oil; one gill applied to each Journal once a month, or one quart to an eight wheel car, is all these boxes require per month [Thirdly] no dust can gain access to the Journal, which is constantly lubricated with clean oil; hence the saving in repairs of Journals and composition bearings, is a matter of importance. [Fourthly,] its construction is truly simple—not complicated, having nothing liable to become loose by constant and severe service. [Fifthly] for convenience there is nothing which approaches this improvement.—The composition bearings may be removed from the Journals of an eight wheel car, by one man, and returned, or duplicates, in twenty minutes, while under the car: the same would require two men, at least half a day with other boxes in use.—The trucks and wheels using these boxes, are free from oil and dirt, usually seen upon all railroad cars, at great expense to the corporation.

NATH'L JACKSON.

Supt. Car Building and Repairs, F.R.R. Co.

Boston, March 9, 1849.

I hereby certify, that I have examined a box for Car Journals, invented by Mr. Lightner of Roxbury, Mass, and I have thought so well of it that I have adopted it on our railroad, I have known of its success on other roads.

S. M. FELTON,

Supt. F. R. R.

Office of the Central R. R., N. J., }  
Elizabethtown, May 1849. }

H. F. ALEXANDER, Esq.,

Dear Sir:—Your favor, [wishing to be informed how we liked Lightner's patent axle boxes for R.R. Journals,] has been duly received; in answer we would say, we have used the boxes on Locomotive tenders one year, more or less, and on our cars some six months. I consider them the best boxes in every respect, I have ever used, or even seen used on any other roads—for safety, durability and the economy pertaining to all the details connected with the boxes and Journals of R. R. Car wheels; and we shall adopt them upon this road.

Yours Respectfully,

JOHN O. STEARNS.

Supt. Central Railroad Co., N. J.

Manchester, N. H., Nov. }  
1st, 1850. }

H. F. Alexander, Sir,

I have used "Lightner's Boxes" under all the Cars of the Manchester and Lawrence railroad, and feel no hesitation in saying that I think them to be the best boxes now in use.

Yours, &c.,

THEODORE ATKINSON, Agent.

Cheshire R. R. Office, Keene, }  
March 5th, 1851. }

Mr. H. F. Alexander,

Sir,—Lightner's Patent Boxes have been used on the Cheshire R. R. about a year, and have given the highest degree of satisfaction.

All the Passenger Cars now in use, and a considerable number of Merchandize Cars are furnished with them, and they will take the place of the Common Boxes on all the cars as fast as circumstances will permit.

Very Resp't.

L. TILTON,

Supt. Cheshire R. R.

Boston and Worcester Railroad, }  
Boston, April 1st, 1851. }

H. F. Alexander, Esq.,

Dear Sir,—Lightner's Patent oil saving box for railroad cars, has been adopted by this corporation; we are taking out the common and substituting the

Lightner's at the rate of fifty boxes per month; it will soon take the place of all others, as it is decidedly preferable to any heretofore used by this corporation.

G. TWITCHELL, Supt.

Statement of amount of oil used on 32 8-wheel freight cars, on the Boston and Providence Railroad (with Lightner's Boxes) from March 10, 1849, to February 27, 1851, and upon 12 8-wheeled passenger cars from September 8, 1849, to February 27, 1851.

#### FREIGHT CARS.

Amount Oil.	No. months.	Amount Oil.	No. months.
1.—21 pts.	10	17.—23½ pts.	14
2.—19 "	6	18.—23½ "	11
3.—25 "	13	19.—36 "	21
4.—18 "	7	20.—22 "	10
5.—22 "	12	21.—38½ "	24
6.—24 "	13	22.—29 "	23
7.—20 "	11	23.—35½ "	23
8.—21 "	11	24.—37½ "	23
9.—23½ "	10	25.—51 "	23
10.—21 "	9	26.—31½ "	24
11.—20 "	9	27.—28½ "	23
12.—21½ "	11	28.—36 "	23
13.—19 "	8	29.—50½ "	24
14.—25½ "	17	30.—50 "	23
15.—20½ "	10	31.—41 "	23
16.—31 "	18	32.—39½ "	23

Total, 925½ pts. 510

#### PASSENGER CARS.

1.—19½ pts.	18	7.—30 pts.	18
2.—25½ "	18	8.—25½ "	18
3.—33½ "	16	9.—29 "	18
4.—19 "	15	10.—46½ "	17
5.—15 "	15	11.—9 "	9
6.—22 "	18	12.—65½ "	17

Total, 340 pts. 197

Averaging 1 4-5 pints of oil for freight, and 1 7-10 for passenger cars per month only!

All orders and enquiries promptly attended to.

BRIDGES & BROTHER,

No. 64 Courtlandt st., New York.

July 25, 1851.

#### Trautwine on R. R. Curves.

By JOHN C. TRAUTWINE, Civil Engineer,  
Philadelphia, Pa.

JUST published, accompanied by a Table of Natural Sines and Tangents to single minutes, by means of which all the necessary calculations may be performed in the field.

This little volume is intended as a field-book for assistants; and will be found extremely useful, as it contains full instructions, (with wood cuts) for laying out, and adjusting curves; with Tables of Angles, Ordinates, etc., for Curves varying from 13 miles, down to 146 feet Radius.

A portable Table of Natural Sines and Tangents to minutes, has for a long time been a desideratum among Engineers, independently of its use in laying out curves.

The volume is neatly got up in duodecimo; and handsomely bound in pocket-book form.

Sold by Wm. Hamilton, Actuary of the Franklin Institute, Philadelphia. Price \$1.

Also in press, and will be issued in a few weeks, "Trautwine's Method of Calculating Excavation and Embankment."

By this method, which is entirely new, (being now made known for the first time) the cubic contents are ascertained with great ease, and rapidly, by means of diagrams, and tables of level cuttings. Thin octavo; neatly half bound, \$1. For sale by Wm. Hamilton.

June 28, 1851.

#### Railroad Iron.

CONTRACTS made by the subscribers, agents for the manufacturers, for the delivery of Railway Iron, at any port in the United States, at fixed prices and of quality tried and approved for many years, on the oldest railways in this country.

RAYMOND & FULLERTON, 45 Cliff st.

#### CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.  
Jan. 20, 1849.

#### To Chief Engineers, Directors of Railroads, Canals, etc.

A Civil Engineer and Surveyor, who has been professionally engaged under the British Government, East India Company, etc., is desirous of obtaining employment as an Assistant. No objection to the South or West. Address for one month to C. E. & S., American Railroad Journal office.

August 16, 1851.

#### To Engineers.

A NEW WORK on the Marine Boilers of the United States, prepared from authentic drawings, and illustrated by 70 engravings, among which are those of the fastest and best steamers in the country, has just been published by B. H. Bartol, Engineer, and is for sale at the store of

D. APPLETON & CO.,

Broadway.

September 1, 1851.

#### Pneumatic process for making Foundations for Bridges, Piers, etc.

THE Attention of Engineers, Contractors, and Bridge Builders, etc., is directed to this method of forming secure foundations. Hollow Cylindrical piles from 8 inches to 10 feet in diameter may be sunk through sand, mud, clay, etc., to any required depth, and filled with concrete or masonry.

The efficacy and economy of the process has been demonstrated in the construction of numerous permanent works, at a much less cost than the use of any other method. (See evidence in Parliamentary enquiry, Railroad Journal, April 19, 1851.)

Contracts made, or licenses granted for the use of the invention in any part of the United States, by

CHARLES PONTEZ,  
34 Liberty street, N. Y.

#### LOWMOOR IRON.

THE LOWMOOR IRON COMPANY having appointed WM. BAILEY LANG their sole agent in America and Canada, he is now prepared to receive and execute all orders for Railway Tire Bars, bent, welded, and blocked Railway Tires, Axles, Piston Rods, and Boiler Plates. Also, plain, angle, rivet and every other description of Lowmoor Iron.

All communications respecting the above are requested to be sent to Wm. Bailey Lang, at his Steel Warehouse, No. 9 Liberty Square, Boston, or to the Lowmoor Iron Works, Bradford, Yorkshire, England.

30th Sept., 1851.

#### RAILROAD SPRINGS.

#### Fuller's Patent India-rubber Springs.

PRICE reduced to 50 cents per pound. The owners of this Patent now manufacture the Springs in their own Factory, and guarantee that each spring shall perform its required duty.

Purchasers guaranteed against adverse claims. They may have full confidence in the working qualities of the springs.

The suits brought against Ray & Co., will soon be brought to issue, and we await the result with satisfaction, having full confidence in the pure administration of the Laws.

The long advertisements put forth by Ray & Co. about prior invention of the spring are worthless; he has not proved prior invention, and cannot sustain his patent in a Court of Law.

For the owners of Fuller's Patent,

G. M. KNEVITT,  
23 Courtlandt st., New York.

October 7, 1851.

#### Railroad Iron.

THE undersigned, Agents for British Manufacturers, continue to sell Railroad Iron of the best quality, and of any weight or pattern required; deliverable at any part of the United States or Canada.

They have now on hand, ready for delivery at New York:

2,000 tons of an approved pattern, weighing about 60 lbs. to the yard.

WM. F. WELD & CO.,  
43 Central Wharf, Boston.

**Practical and Scientific Books**

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**HENRY CAREY BAIRD,**

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For sale by Dewitt & Davenport, Tribune Buildings, New York, and Booksellers generally throughout the United States and Canada.

Now being published in Twelve Parts, price 25 cents each, the **PRACTICAL MODEL CALCULATOR**, for the Engineer, Machinist, Manufacturer of Engine work, Naval Architect, Miner and Millwright.—By Oliver Byrne, Compiler and Editor of the Dictionary of Machines, Mechanics, Engine Work and Engineering, and Author of various Mathematical and Mechanical works—illustrated by numerous Engravings; forming, when completed, one large volume, octavo, of nearly 600 pages.

It will contain such calculations as are met with and required in the Mechanical Arts, and establish models or standards to guide practical men. The tables that are introduced, many of which are new, will greatly economize labor, and render the everyday calculations of the practical man comprehensive and easy. From every single calculation given in this work other calculations are readily modeled, so that each may be considered the head of a numerous family of practical results.

The examples selected will be found appropriate, and in all cases taken from the actual practice of the present time. Every rule has been tested by the unerring results of mathematical research, and confirmed by experiment, when such was necessary.

The Practical Model Calculator, will be found to fill a vacancy in the library of the practical working man long considered a requirement. It will be found to excel all other works of a similar nature, from the great extent of its range, the exemplary nature of its well selected examples, and from the easy, simple and systematic manner in which the model calculations are established.

Parts 1, 2 and 3 now ready.

American Miller and Millwright's Assistant, By W. C. Hughes. 12mo., illustrated....	\$1 00
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**THE Fourth Annual Exhibition of AMERICAN MANUFACTURES**, by the MARYLAND INSTITUTE for the Promotion of the Mechanic Arts, will be opened in Baltimore on the 20th October, 1851.

The Exhibition will be held in the **SPLENDID NEW HALL** of the Institute, (fronting on Baltimore street) now being rapidly completed. Their edifice is centrally situated, chaste in its architecture, solid in its construction, and is by far the largest and most complete building in the United States, devoted to the Mechanic Arts. It may be added that this building is 355 feet long by 60 in breadth, with an average height of 68 feet, containing some twelve apartments, the largest of which is 255 feet by 60, and that the cost will be over \$70,000.

To this Exhibition, the Managers ask the attention of all engaged in industrial pursuits throughout the country, and cordially invite them to contribute specimens of their best productions for public inspection, and to compete for the prizes offered by the Institute. These prizes consist of **GOLD and SILVER MEDALS, DIPLOMAS, etc.**, which were last year distributed as follows:—*Gold Medals*, 16; *Silver ditto*, 90; *Diplomas*, 60; besides 85 articles of Jewelry, etc., to ladies. Fair play will be scrupulously observed towards all, and every facility of Steam power, shafting, fixture, labor, &c., &c., will be amply provided free of expense. The machinery will be under a special superintendent, and a fine display of it is looked for. The last exhibition of the Institute was visited by more than 40,000 persons, and with their vastly improved accommodations and alterations, this number will be doubled at the coming display, embracing many Virginians, Pennsylvanians, and other strangers from the South and West.

Joshua Vansant, President.

Ed. Needles, } Vice Presidents.

F. A. Fisher, }

Samuel Sands, Rec. Sec'y.

Wm. Prescott Smith, Cor. Sec.

F. J. Clare, Treasurer.

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(The last nine in *Italics* are the Committee on Exhibition.)

The Hall will be opened for the reception of goods on **MONDAY, 13th October**; on the next Monday, 20th, at 7 P. M., the Exhibition will be formally opened to the public, and will positively close on **Wednesday, 19th November**. Articles for competition must be in the Hall by **Thursday night, Oct. 16, unless delayed in shipment after starting in ample time**.

Those who intend depositing, will give the Committee or the Agent, notice as early as possible, stating the nature of the goods, and probable amount of room required, to exhibit them to advantage.

Circulars, containing a view of the new Hall and the full regulations of the Committee, with special information, if required, may be had promptly, by addressing the undersigned, or the Institute's Agent, J. S. Selby, Baltimore, *post-paid*.

ADAM DENMEAD,

Chairman Com. on Exhibition for 1851.

**SUPERIOR BLACK WRITING & COPYING INK.**

**Jones' Empire Ink.**

87 Nassau st., Sun Building, New York city.

Net prices to the trade—

Quarts, per dozen,	\$1 50	6 oz. per dozen,	\$0 50
Pints,	1 00	4 " "	0 37 1/2
3 ounces,	0 62 1/2	2 " "	0 25

On draught per Gallon, 20 cents.

This is the best Ink manufactured, it flows freely, is a good copying ink, and will not mould, corrode, precipitate or decay. Orders for export, or home consumption, carefully and promptly attended to by

THEODORE LENT.

**To Railroad Companies, etc.**

The undersigned has at last succeeded in constructing and securing by letters patent, a Spring Pad-lock which is secure, and cannot be knocked open with a stick, like other spring locks, and therefore particularly useful for locking Cars, and Switches, etc.

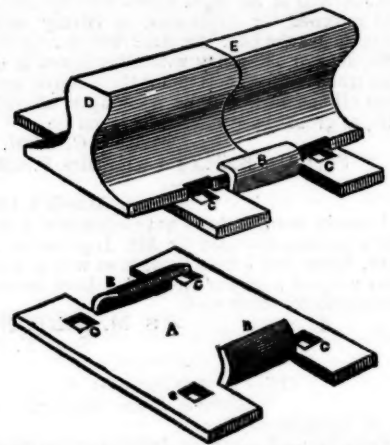
I also invite attention to an improved **PATENT SPRING LOCK**, for **SLIDING Doors** to Freight and Baggage Cars, now in use upon the Pennsylvania Central, Greenville and Columbia, S.C., Reading, Pa., and other Railroads.

Companies that are in want of a good Pad-lock, can have open samples sent them that they may examine and judge for themselves, by sending their address to

C. LIEBRICH,

46 South 8th St. Philadelphia.

May 9, 1851.

**The American Railroad Chair Manufacturing Co.**

**ARE** prepared to make **WROUGHT IRON RAIL ROAD CHAIRS**, of various sizes, at short notice.

By use of the **WROUGHT IRON CHAIR**, the necessity of the wedge is entirely done away—the lips of the chair being set, by means of a sledge or hammer, close and firmly to the flange of the rail.

The less thickness of metal necessary in the Wrought Iron Chair gives much greater power and force to the spikes when driven—and consequently a much less liability to the spreading of the rails by reason of the spikes drawing or becoming bent.

The less weight necessary in the Wrought Iron Chair, will enable us to furnish them at a cost much below that of **CAST IRON CHAIRS**.

**DESCRIPTION OF THE ABOVE CUTS.**

Figure 1 is a perspective view of the rail secured in the chair, and fig. 2 is a perspective view of the chair itself. D, E, are sections of two rails placed together, and secured at the joint on the chair by the jaws B, B. The chair is bolted down by spikes C, C. In fig. 2, the chair is represented as made of a single block or plate A of wrought iron.

The chair is set in its proper place on the track, spiked down, and the ends of the two rails brought together within the jaws as represented in fig. 1.

For further information address,

N. C. TROWBRIDGE, Secretary,  
Poughkeepsie, N. Y.

June 1, 1851.

**Railroad Commission Agency.**

**THE** Subscriber offers his services to Railroad Co's and Car Makers for the purchase of equipment and furniture of roads and depots and all articles and materials required in the construction of cars, with cash or approved credit. No effort will be spared to select the best articles at the lowest market price.

He is sole Agent for the manufacture of the **ENAMELED CAR LININGS**, now in universal use. The best Artists are employed in designing new styles, and he will make to order pieces with appropriate designs for every part of the car, in all colors, or with silver grounds and bronzed or velvet figures.

He is also Agent for Page's Car Window Sash Fasteners, which is preferred by all who have used it to any other.

CHARLES STODDER,  
75 Kilby st., Boston.

June 20, 1851.

3m.